

DIRECTORY OF MISSOURI NATURAL AREAS





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Directory of Missouri Natural Areas

by

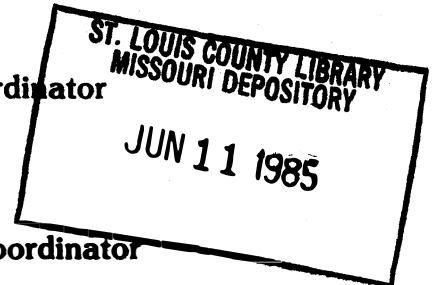
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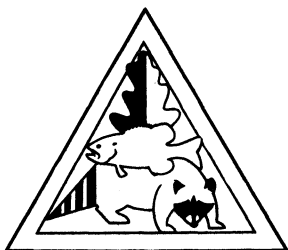
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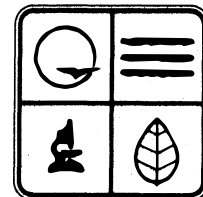
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Missouri Department of Conservation



Missouri Department of Natural Resources

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Introduction

Missouri Natural Areas as of January 1, 1985

(Areas are discussed under the counties in which they occur. Counties appear in alphabetical order in this publication.)

THIS DIRECTORY gives locations and brief descriptions of Missouri Natural Areas. These areas have been designated by the Missouri Natural Areas Committee, and formally established by the Department of Conservation or the Department of Natural Resources. Natural areas are terrestrial or aquatic biological communities, or geological sites, in a natural or nearly undisturbed state. They are permanently protected and managed to preserve examples of native plant and animal communities, or rare members of such communities, and examples of natural geological features.

The Department of Conservation (MDC) and the Department of Natural Resources (DNR), parent agencies of the Missouri Natural Areas Committee, specify that natural areas represent the highest and best use of such tracts. They will not authorize any use or diversion of these areas which is incompatible with the objective of natural areas preservation, unless there is a critical need for which there is no alternative.

Besides the Department of Conservation and Department of Natural Resources, Missouri Natural Areas are owned by other public agencies, private organizations and individuals. The U.S. Army Corps of Engineers, U.S. Forest Service, Kansas City Parks and Recreation Department, National Park Service, The Nature Conservancy, L-A-D Foundation, Missouri Prairie Foundation, University of Missouri and Frank B. Powell Lumber Company are examples of cooperators.

Most natural areas are open for public visitation and study, but most are closed to camping, picnicking or similar recreational uses. Only foot traffic is permitted within these areas. Other restrictions are posted on some natural areas.

The tallgrass prairie natural areas are managed somewhat differently from most other natural areas. In order to maintain the variety and vigor of the prairie, parts of some of these prairies may, from time to time, be grazed, mowed or burned. This management sometimes gives the prairies an unnatural appearance for a short time; however, it maintains the quality of prairie vegetation and simulates the original grazing of the bison and the fires of the plains.

Visitors are encouraged to report their observations on Missouri Natural Areas. Lists of plants, blooming dates and locations, nesting and migratory birds seen, and other animals observed are the types of information wanted. These may be reported to the Missouri Natural Areas Committee, c/o Missouri Department of Conservation, P.O. Box 180, Jefferson City, Missouri 65102.

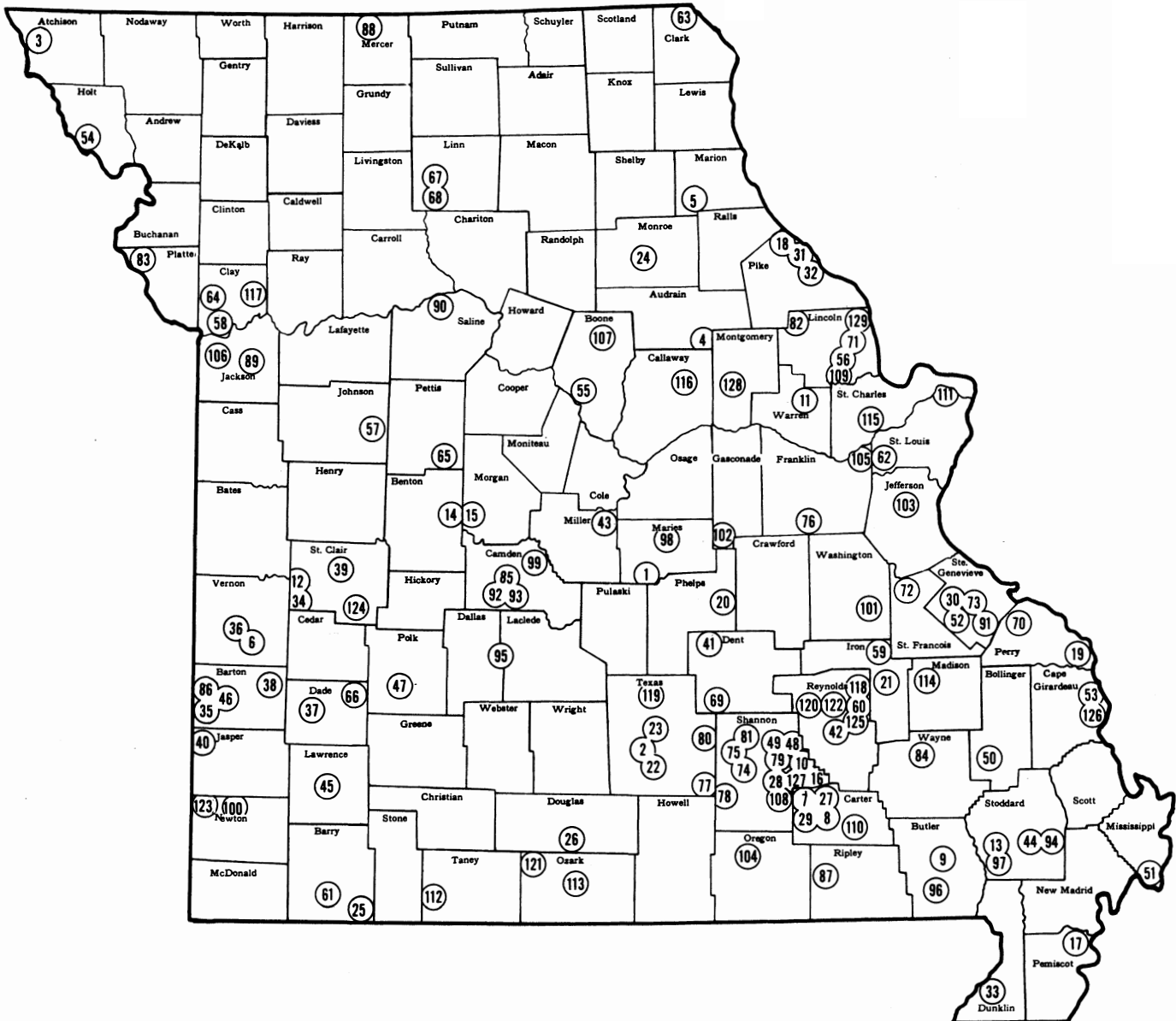
The Missouri Natural Areas Committee was established by formal joint action of the Missouri Department of Conservation and the Missouri Department of Natural Resources. The U.S. Forest Service (USFS) and National Park Service (NPS) also participate in committee activities. The committee is chaired by Allen Brohn, MDC, with John Karel, DNR, as vice chairman. Other committee members are Eugene L. Brunk, MDC; Glen R. Gessley, DNR; Paul Nelson, DNR; William L. Pflieger, MDC; Jerry D. Vineyard, DNR; John E. Wylie, MDC. The Natural Areas Coordinators of the two departments are Greg Iffrig, DNR, and Richard H. Thom, MDC.

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Missouri Natural Areas

Numbered in order of designation



Numerical Listing of Missouri Natural Areas

Numbered in order of designation

- | | | |
|---------------------------------------|---------------------------------------|---------------------------------------|
| 1 Clifty Creek | 51 Big Oak Tree | 102 Mint Spring Seep |
| 2 Piney River Narrows | 52 Orchid Valley | 103 Valley View Glades |
| 3 Brickyard Hill Loess Mounds | 53 Vancill Hollow | 104 Tupelo Gum Pond |
| 4 Diggs White Oak | 54 Jamerson C. McCormack Loess Mounds | 105 Engelmann Woods |
| 5 Elmslie State Forest | 55 Schnabel Woods | 106 Blue River Glades |
| 6 Osage Prairie | 56 Pickerelweed Pond | 107 The Pinnacles |
| 7 Peck Ranch Headwaters Stream | 57 Pin Oak Slough | 108 Overcup Oak Sink |
| 8 Peck Ranch Sinkhole Pond | 58 Hidden Valley | 109 George A. Hamilton Forest |
| 9 Poplar Bluff Bottomland Hardwoods | 59 Elephant Rocks | 110 Big Spring |
| 10 Powder Mill Cave | 60 Johnson's Shut-Ins | 111 Pelican Island |
| 11 Reifsnider White Oak | 61 Roaring River Cove Hardwoods | 112 White River Balds |
| 12 Taberville Prairie | 62 Babler Southwoods Hollow | 113 Long Bald |
| 13 Bradyville | 63 Des Moines River Ravines | 114 St. Francis River |
| 14 Big Buffalo Creek Marsh | 64 Maple Woods | 115 Weldon Spring Hollow |
| 15 Big Buffalo Creek Hardwoods | 65 Paint Brush Prairie | 116 Whetstone Creek |
| 16 Blue Spring | 66 Bona Glade | 117 Isley Park Woods |
| 17 Wolf Bayou | 67 Cordgrass Bottoms | 118 Johnson's Shut-Ins Fen |
| 18 DuPont Upland Forest | 68 Locust Creek | 119 Quercus Flatwoods |
| 19 Tower Rock | 69 Montauk Upland Forest | 120 Grasshopper Hollow |
| 20 Woodson K. Woods Bottomland Forest | 70 Ball Mill Resurgence | 121 Hayden Bald |
| 21 Royal Gorge | 71 Big Sugar Creek | 122 Husman Fen |
| 22 Dripping Springs | 72 Coonville Creek | 123 Wildcat Glade |
| 23 Horseshoe Bend | 73 Pickle Creek | 124 Brush Creek |
| 24 Rocky Hollow | 74 Burr Oak Basin | 125 Johnson's Shut-Ins Dolomite Glade |
| 25 Rock Spring Bluff | 75 Sunklands | 126 Kelso Sanctuary |
| 26 Bryant Creek | 76 Meramec Upland Forest | 127 Cardareva Bluff |
| 27 Golden Seal | 77 Barn Hollow | 128 Danville Glades |
| 28 Mill Mountain | 78 Jam Up Cave | 129 Westport Island |
| 29 Mule Hollow Glade | 79 Prairie Hollow Gorge | |
| 30 Hickory Canyons | 80 Bee Rock Sink | |
| 31 Bur-reed Slough | 81 Triple Sink | |
| 32 Oval Lake | 82 Sandy Creek Natural Tunnel | |
| 33 Cash Swamp | 83 Little Bean Marsh | |
| 34 Schell-Osage Prairie Relicts | 84 Mudlick Mountain | |
| 35 Hunkah Prairie | 85 Red Sink | |
| 36 Little Osage Prairie | 86 Regal Prairie | |
| 37 Niawathe Prairie | 87 Cupola Pond | |
| 38 Pawhuska Prairie | 88 Bagley Woods | |
| 39 Lichen Glade | 89 Burr Oak Woods | |
| 40 Wah-Sha-She Prairie | 90 Van Meter Forest | |
| 41 Hyer Woods | 91 Botkin's Pine Woods | |
| 42 Lily Pond | 92 Ha Ha Tonka Karst | |
| 43 Bat Cave | 93 Lodge Glade | |
| 44 Holly Ridge | 94 Beech Springs | |
| 45 Mount Vernon Prairie | 95 Bennett Spring Hanging Fen | |
| 46 Tzi-Sho Prairie | 96 Allred Lake | |
| 47 La Petite Gemme Prairie | 97 Otter Slough | |
| 48 Current River | 98 Spring Creek Gap Glades | |
| 49 Pioneer | 99 Coakley Hollow Fen | |
| 50 Blue Pond | 100 Diamond Grove Prairie | |
| | 101 Hughes Mountain | |

Alphabetical Listing of Missouri Natural Areas

Natural Area	County	Natural Area	County
Allred Lake	96 Butler	Lily Pond	42 Reynolds
Babler Southwoods Hollow	62 St. Louis	Little Bean Marsh	83 Platte
Bagley Woods	88 Mercer	Little Osage Prairie	36 Vernon
Ball Mill Resurgence	70 Perry	Locust Creek	68 Linn
Barn Hollow	77 Texas	Lodge Glade	93 Camden
Bat Cave	43 Miller	Long Bald	113 Ozark
Bee Rock Sink	80 Texas	Maple Woods	64 Clay
Beech Springs	94 Stoddard	Meramec Upland Forest	76 Franklin
Bennett Spring Hanging Fen	95 Dallas/Laclede	Mill Mountain	28 Shannon
Big Buffalo Creek Hardwoods	15 Morgan	Mint Spring Seep	102 Gasconade
Big Buffalo Creek Marsh	14 Benton	Montauk Upland Forest	69 Dent
Big Oak Tree	51 Mississippi	Mount Vernon Prairie	45 Lawrence
Big Spring	110 Carter	Mudlick Mountain	84 Wayne
Big Sugar Creek	71 Lincoln	Mule Hollow Glade	29 Carter
Blue Pond	50 Bollinger	Niawathe Prairie	37 Dade
Blue River Glades	106 Jackson	Orchid Valley	52 Ste. Genevieve
Blue Spring	16 Shannon	Osage Prairie	6 Vernon
Bona Glade	66 Dade	Otter Slough	97 Stoddard
Botkin's Pine Woods	91 Ste. Genevieve	Oval Lake	32 Pike
Bradyville	13 Stoddard	Overcup Oak Sink	108 Shannon
Brickyard Hill Loess Mounds	3 Atchison	Paint Brush Prairie	65 Pettis
Brush Creek	124 St. Clair	Pawhuska Prairie	38 Barton
Bryant Creek	26 Douglas	Peck Ranch Headwaters Stream	7 Carter
Bur-reed Slough	31 Pike	Peck Ranch Sinkhole Pond	8 Carter
Burr Oak Basin	74 Shannon	Pelican Island	111 St. Louis
Burr Oak Woods	89 Jackson	Pickelweed Pond	56 Lincoln
Cardareva Bluff	127 Shannon	Pickle Creek	73 Ste. Genevieve
Cash Swamp	33 Dunklin	Pin Oak Slough	57 Johnson
Clifty Creek	1 Maries	Piney River Narrows	2 Texas
Coakley Hollow Fen	99 Camden	Pioneer	49 Shannon
Coonville Creek	72 St. Francois	Poplar Bluff Bottomland Hardwoods	9 Butler
Cordgrass Bottoms	67 Linn	Powder Mill Cave	10 Shannon
Cupola Pond	87 Ripley	Prairie Hollow Gorge	79 Shannon
Current River	48 Shannon	Quercus Flatwoods	119 Texas
Danville Glades	128 Montgomery	Red Sink	85 Camden
Des Moines River Ravines	63 Clark	Regal Prairie	86 Barton
Diamond Grove Prairie	100 Newton	Reifsnider White Oak	11 Warren
Diggs White Oak	4 Audrain	Roaring River Cove Hardwoods	61 Barry
Dripping Springs	22 Texas	Rock Spring Bluff	25 Barry
DuPont Upland Forest	18 Pike	Rocky Hollow	24 Monroe
Elephant Rocks	59 Iron	Royal Gorge	21 Iron
Elmslie State Forest	5 Marion	St. Francis River	114 Madison
Engelmann Woods	105 Franklin	Sandy Creek Natural Tunnel	82 Lincoln
George A. Hamilton Forest	109 Lincoln	Schell-Osage Prairie Relicts	34 St. Clair
Golden Seal	27 Carter	Schnabel Woods	55 Boone
Grasshopper Hollow	120 Reynolds	Spring Creek Gap Glades	98 Maries
Ha Ha Tonka Karst	92 Camden	Sunklands	75 Shannon
Hayden Bald	121 Ozark	Taberville Prairie	12 St. Clair
Hickory Canyons	30 Ste. Genevieve	The Pinnacles	107 Boone
Hidden Valley	58 Clay	Tower Rock	19 Perry
Holly Ridge	44 Stoddard	Triple Sink	81 Shannon
Horseshoe Bend	23 Texas	Tupelo Gum Pond	104 Oregon
Hughes Mountain	101 Washington	Tzi-Sho Prairie	46 Barton
Hunkah Prairie	35 Barton	Valley View Glades	103 Jefferson
Husman Fen	122 Reynolds	Van Meter Forest	90 Saline
Hyer Woods	41 Dent	Vancill Hollow	53 Cape Girardeau
Isley Park Woods	117 Clay	Wah-Sha-She Prairie	40 Jasper
Jam Up Cave	78 Shannon	Weldon Spring Hollow	115 St. Charles
Jamerson C. McCormack Loess Mounds	54 Holt	Westport Island	129 Lincoln
Johnson's Shut-Ins	60 Reynolds	Whetstone Creek	116 Callaway
Johnson's Shut-Ins Dolomite Glades	125 Reynolds	White River Balds	112 Taney
Johnson's Shut-Ins Fen	118 Reynolds	Wildcat Glade	123 Newton
Kelso Sanctuary	126 Cape Girardeau	Wolf Bayou	17 Pemiscot
La Petite Gemme Prairie	47 Polk	Woodson K. Woods Bottomland Forest	20 Phelps
Lichen Glade	39 St. Clair		

County Listing of Missouri Natural Areas

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Atchison	14	Dent	41
3 Brickyard Hill Loess Mounds		41 Hyer Woods	
Audrain	15	69 Montauk Upland Forest	
4 Diggs White Oak		Douglas	43
Barry	16	26 Bryant Creek	
25 Rock Spring Bluff		Dunklin	44
61 Roaring River Cove Hardwoods		33 Cash Swamp	
Barton	18	Franklin	45
35 Hunkah Prairie		76 Meramec Upland Forest	
38 Pawhuska Prairie		105 Engelmann Woods	
46 Tzi-Sho Prairie		Gasconade	47
86 Regal Prairie		102 Mint Spring Seep	
Benton	20	Holt	48
14 Big Buffalo Creek Marsh		54 Jamerson C. McCormack Loess Mounds	
Bollinger	21	Iron	49
50 Blue Pond		21 Royal Gorge	
Boone	22	59 Elephant Rocks	
55 Schnabel Woods		Jackson	50
107 The Pinnacles		89 Burr Oak Woods	
Butler	24	106 Blue River Glades	
9 Poplar Bluff Bottomland Hardwoods		Jasper	52
96 Allred Lake		40 Wah-Sha-She Prairie	
Callaway	26	Jefferson	53
116 Whetstone Creek		103 Valley View Glades	
Camden	27	Johnson	54
85 Red Sink		57 Pin Oak Slough	
92 Ha Ha Tonka Karst		Lawrence	55
93 Lodge Glade		45 Mount Vernon Prairie	
99 Coakley Hollow Fen		Lincoln	56
Cape Girardeau	30	56 Pickerelweed Pond	
53 Vancill Hollow		71 Big Sugar Creek	
126 Kelso Sanctuary		82 Sandy Creek Natural Tunnel	
Carter	32	109 George A. Hamilton Forest	
7 Peck Ranch Headwaters Stream		129 Westport Island	
8 Peck Ranch Sinkhole Pond		Linn	59
27 Golden Seal		67 Cordgrass Bottoms	
29 Mule Hollow Glade		68 Locust Creek	
110 Big Spring		Madison	60
Clark	35	114 St. Francis River	
63 Des Moines River Ravines		Maries	61
Clay	36	1 Clifty Creek	
58 Hidden Valley		98 Spring Creek Gap Glades	
64 Maple Woods		Marion	63
117 Isley Park Woods		5 Elmslie State Forest	
Dade	38	Mercer	64
37 Niawathe Prairie		88 Bagley Woods	
66 Bona Glade		Miller	65
Dallas	40	43 Bat Cave	
95 Bennett Spring Hanging Fen			

	Page		Page
Mississippi	66	St. Francois	91
51 Big Oak Tree		72 Coonville Creek	
Monroe	67	St. Louis	92
24 Rocky Hollow		62 Babler Southwoods Hollow	
Montgomery	67	111 Pelican Island	
128 Danvill Glades		Ste. Genevieve	94
Morgan	68	30 Hickory Canyons	
15 Big Buffalo Creek Hardwoods		52 Orchid Valley	
Newton	69	73 Pickle Creek	
100 Diamond Grove Prairie		91 Botkin's Pine Woods	
123 Wildcat Glade		Saline	95
Oregon	70	90 Van Meter Forest	
104 Tupelo Gum Pond		Shannon	96
Ozark	71	10 Powder Mill Cave	
113 Long Bald		16 Blue Spring	
121 Hayden Bald		28 Mill Mountain	
Pemiscot	73	48 Current River	
17 Wolf Bayou		49 Pioneer	
Perry	74	74 Burr Oak Basin	
19 Tower Rock		75 Sunklands	
70 Ball Mill Resurgence		78 Jam Up Cave	
Pettis	76	79 Prairie Hollow Gorge	
65 Paint Brush Prairie		81 Triple Sink	
Phelps	77	108 Overcup Oak Sink	
20 Woodson K. Woods Bottomland Forest		127 Cardareva Bluff	
Pike	78	Stoddard	103
18 DuPont Upland Forest		13 Bradyville	
31 Bur-reed Slough		44 Holly Ridge	
32 Oval Lake		94 Beech Springs	
Platte	80	97 Otter Slough	
83 Little Bean Marsh		Taney	105
Polk	81	112 White River Balds	
47 La Petite Gemme Prairie		Texas	106
Reynolds	82	2 Piney River Narrows	
42 Lily Pond		22 Dripping Springs	
60 Johnson's Shut-Ins		23 Horseshoe Bend	
118 Johnson's Shut-Ins Fen		77 Barn Hollow	
120 Grasshopper Hollow		80 Bee Rock Sink	
122 Husman Fen		119 Quercus Flatwoods	
125 Johnson's Shut-Ins Dolomite Glade		Vernon	110
Ripley	85	6 Osage Prairie	
87 Cupola Pond		36 Little Osage Prairie	
St. Charles	86	Warren	111
115 Weldon Spring Hollow		11 Reifsnider White Oak	
St. Clair	87	Washington	112
12 Taberville Prairie		101 Hughes Mountain	
34 Schell-Osage Prairie Relicts		Wayne	113
39 Lichen Glade		84 Mudlick Mountain	
124 Brush Creek			

Missouri's Natural Divisions

(adapted from the Missouri Conservationist, February 1981)

NATURAL FORCES and events of the remote past have influenced Missouri's landscape in both stark and subtle ways. A naturalist muses over the effects of ancient forces just as an historian considers past human events in building an understanding of the present.

A student of Missouri's natural history might ask what north Missouri would be like if the great ice sheets had not crunched and scraped their way over that part of the state 500,000 years ago; or what the Ozarks would have been like if they had not been exposed to erosion for hundreds of millions of years.

The Natural Divisions of Missouri is a map which divides the state into major regions based on geologic history, soils, topography, plant and animal distribution, and other natural features. The map divides the state into six major regions and 19 subregions which are termed the natural divisions and sections. The Missouri Natural Areas System represents presettlement forests, prairies, marshes, glades and other natural communities from the various natural divisions and sections.

Many people think of forested Ozark hills and hollows when they think of Missouri. This is indeed a typical landscape of the Ozark Natural Division. The division has an ancient geological history which included several periods of slow uplift accompanied by deep erosion by its streams. This erosion of fairly level plateau has created a landscape of deep, winding hollows and steep cliffs with few prominent peaks. The erosion also exposed a variety of rocks—sandstone, limestone, dolomite, chert, granite and rhyolite.

The Ozarks have been an exposed land mass for over 250 million years, while surrounding regions were repeatedly covered by glaciers, seas or floods. Staying high and dry for so long permitted uninterrupted use of the Ozarks by plants and animals. The great age, together with diversity of rock types, soils and topography, created habitats for more species of animals and plants than in any other part of the state. Some species, such as the cave-dwelling grotto salamander, are found nowhere else in the world. Special features such as caves, sinkholes, springs and losing streams are associated with the limestone geology and, again, with great geologic age. Thin Ozark soils often allow the bedrock to be exposed to form another typical Ozark natural community—the glade. Savannas, habitats of thinly spaced trees and prairie ground cover, occurred where the western prairies met the Ozark forests. Pine and deciduous forests made up most of the presettlement vegetation. The Ozark Natural Division is subdivided into six sections based on differences in soils, topography, bedrock and river drainages.

Most of the state north of the Missouri River was twice covered by great ice sheets. Two major glaciers leveled the landscape and pushed rocks and soil over the bedrock. The last Missouri glacier retreated perhaps 400,000 years ago, although other glaciers occupied parts of Iowa and Illinois as recently as 12,000 years ago. The topographic features of the Glaciated Plains Natural Division are therefore much younger than those of the Ozarks, and erosion has not had so long a time to sculpt the landscape.

Besides having a leveling effect, the glaciers deposited silts, sands, gravels and boulders, providing parent materials for soil development. The ice sometimes ground rock into a fine glacial flour which was picked up by the wind and deposited over the landscape as a substance called loess. Along the Missouri River, the loess often accumulated to thicknesses of ten feet. In the northwestern counties the wind deposited a thick layer of loess which formed a series of steep dunes or mounds along the east side of the Missouri River.

The gentle terrain and deep soils have made the Glaciated Plains Natural Division ideal for agriculture. Presettlement vegetation was about half deciduous forest and half tallgrass prairie. Prairie has all but disappeared from the glaciated plains, but tiny remnants along some railroad tracks still testify to its former existence. The four sections of the Glaciated Plains Natural Division are based on differences in soils, river drainages and glacial history.

The Ozark Border Natural Division is a broad transition zone where the Ozarks blend into other regions to the north and east. Ozarklike hills and hollows occur along the major streams, but the soils, often derived from loess, are often deeper and more productive than those of the Ozarks. The ranges of many plants and animals of the glaciated plains and the Ozarks overlap in the Ozark Border Natural Division. This division was mostly forested in presettlement times, but prairies, glades and other natural communities also occurred. Springs, caves, sinkholes, cliffs and pinnacles are common natural features. The Ozark Border Natural Division is subdivided into two sections.

The Missouri and Mississippi rivers and their former floodplains and terraces are distinctive enough to form their own Big Rivers Natural Division. The lower portions of the Grand and Des Moines rivers also are included. The big rivers and their associated land areas have been altered greatly by channel modification, leveeing, construction of locks and dams, and agriculture. Chutes, sloughs, islands, sand and mud bars, marshes, prairies and forests once covered this division. The soils are deep sediments that the rivers deposited during the recent geologic times.

About ten kinds of fishes are restricted in Missouri to the Big Rivers Natural Division and about 30 more have distributions centered in this area. In the fall, hundreds of bald eagles concentrate along the rivers to overwinter. The division is subdivided into four sections.

The Mississippi River flows southward into the Mississippi Lowlands Natural Division, a region that less than 100 years ago was a wilderness of swamps and lowland forests. The soils of the mostly level lowlands are formed from alluvial deposits hundreds of feet thick. There is a fairly sharp separation in the form of an escarpment between the Mississippi Lowlands and the Ozark and Ozark Border natural divisions to the north. The lowlands landscape dates back several hundred thousand years, when it formed the upper end of what is now the Gulf of Mexico. Much later, during the time of the glaciers, meltwater from the retreating ice formed the Ohio and Mississippi river systems. These rivers altered their courses several times and along with the Castor, St. Francis and Whitewater rivers, formed the ridges, basins and low terraces characteristic of

the division. These rivers also deposited the thick sediments over the division. Crowleys Ridge, the divisions' most prominent topographic feature, forms its own Section. During the early to mid-1900s the Mississippi Lowlands Natural Division was drained, the timber cleared and the land converted to agriculture.

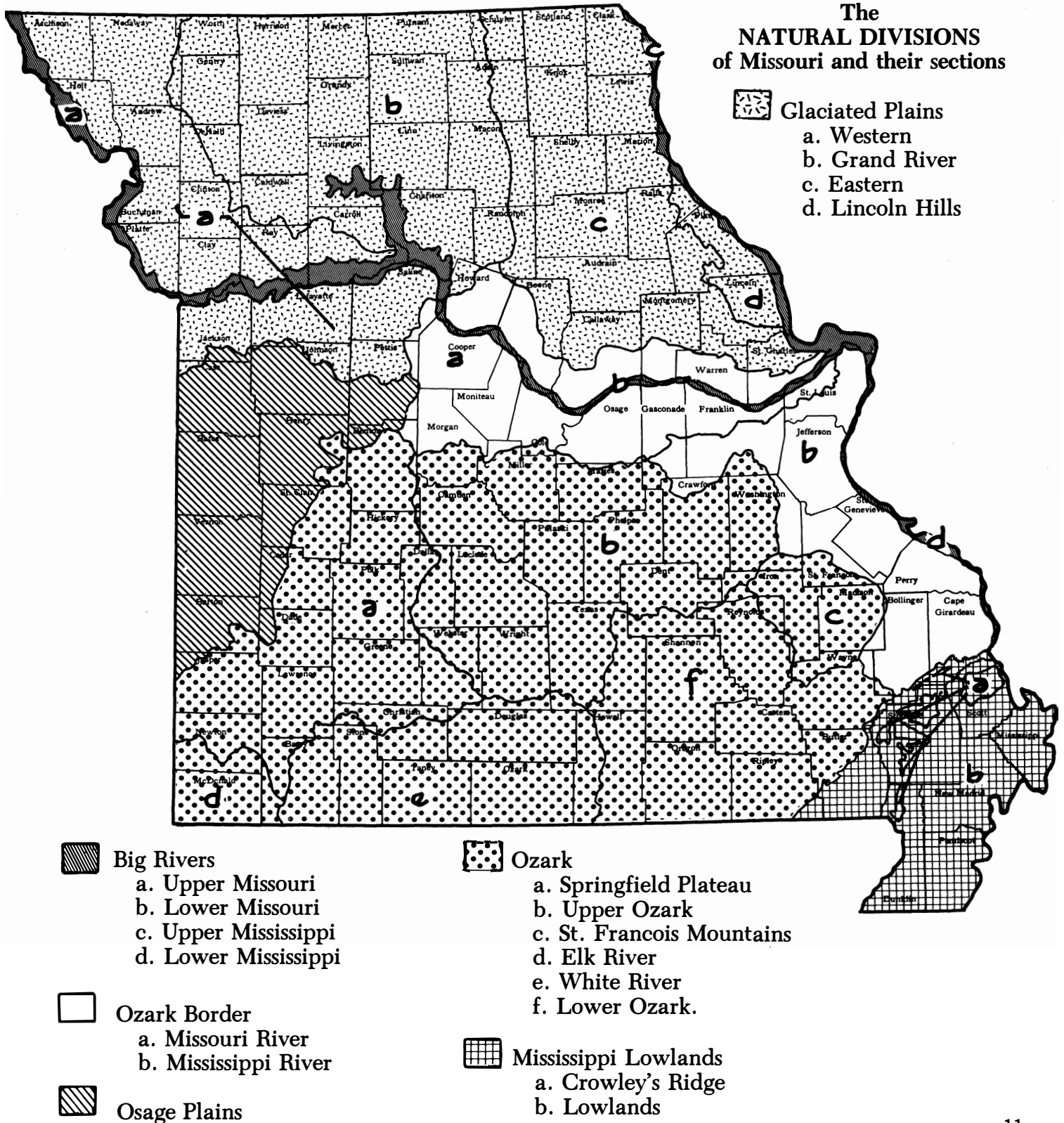
Many plants and animals of the coastal plains occur in the lowlands, and many of these species are restricted in Missouri to this region.

The Osage Plains Natural Division is Missouri's prairie region. About three-quarters of this division was covered with prairie before settlement, and most of our remaining prairie is here. Forest and savanna occupied most of what was not prairie. This unglaciated area is characterized by gently rolling hills and plains. The soils were developed mainly from the underlying bedrock instead of from material formed by the glaciers as in the glaciated plains. The Osage Plains Natural Division is generally lower in elevation than the Ozarks, has few caves, springs or sinkholes, and has less rugged terrain. Streams commonly have shallow valleys and broad floodplains with many sloughs and marshes. Erosion has carved cliffs and shelter caves along some of the streams. Most of the common plants and animals of the Osage plains are also found in the glaciated plains. There is only one section in this natural division.

The natural divisions map provides a framework for thinking of Missouri's natural history. Of course, the exact boundaries of the divisions and sections are not clearly visible on the landscape, but dividing the state in this way does allow us to make certain generalizations about Missouri. The map also gives us some understanding of the influence of the land's history on the present landscape, plants and animals.

(NOTE: For a technical discussion of this subject see "The Natural Divisions of Missouri" by R.H. Thom and J.H. Wilson in *Transactions of the Missouri Academy of Science*, Vol. 14, 1980, pp. 9-23.)

The Natural Divisions of Missouri



What The Land Once Was

(adapted from the *Missouri Conservationist*, February, 1980)

CENTURIES AGO an Indian hunched over a flint nodule, expertly flaking off chips, working toward the dart point that he saw in his mind's eye. He had chosen as his working place an area of sandy soil in the midst of a deep pine forest.

In front of him lay a small pond formed from water accumulating in the bowl of a sinkhole. The sinkhole itself had formed when the surface collapsed into a shallow cave creating a natural pond. Perhaps the Indian had chosen this spot because the openness of the pond created a pleasing relief from the monotony of the dense forest, or perhaps it was the only source of water on this dry ridge.

He paused, occasionally, to gaze across the pond. He saw the showy blossoms of swamp rose, wild hibiscus and buttonbush in the tangled thicket that ringed the pond's edge. He knew that these were not plants of the forest, but were special to this place. He watched a pileated woodpecker break out of the forest in raucous, heavy-bodied flight to swoop across the pond and disappear again into the trees. In the distance he heard turkeys scratching for acorns among the dry leaves. The Indian returned to his flint. Perhaps inspired by this place, he crafted a perfect hunting point.

Today the Indian is gone, but his flint chips remain in the sandy soil under a new generation of pines. A present-day visitor can stand on the same ground as the ancient craftsman and gaze at the same scene that inspired his work.

True, the intervening centuries brought changes to the pond. More than once, men have cleared off the trees; hogs and cattle have wallowed in the pond; and in drought years the pond went dry and burned along with the surrounding Ozark forest. But the unusual plants somehow persist in spite of man's abuses and nature's vicissitudes. They are well adapted to the special conditions that the pond offers. With the protection of the surrounding forest, the end of open range and the control of man-caused fire, the pond gradually recovered its original character. It eventually became a living museum—an example of primitive Missouri.

There are many sinkhole ponds in the Ozarks. A few of the best have been permanently protected as reminders of what the land once was. A few of the best are Missouri Natural Areas.

Natural areas are land, water or geological sites that essentially have retained or recovered their primitive conditions. The Department of Conservation, recognizing the importance of such areas, established a natural areas program in 1970. The fledgling program began by selecting the best areas on land owned or managed by the department and designating them Missouri Natural Areas.

By the end of the nation's bicentennial, the six-year-old natural areas system contained 49 areas with about 6,000 acres. All of them were managed by the Department of Conservation, but many were owned by The Nature Conservancy and the L-A-D Foundation of St. Louis, two private organizations that acquire natural areas for preservation.

In 1977, several events strengthened natural areas protection. In that year, the new conservation sales tax made possible increased emphasis on the identification and acquisition of natural areas. High-quality areas could be purchased if equally good examples did not exist on department lands.

In this same year, the Department of Natural Resources joined the Conservation Department to create an interagency Missouri Natural Areas System, which extended the designation of natural areas to state parks. Representatives from each department made up a new Missouri Natural Areas Committee to oversee the effort.

The two agencies agreed that the system should encompass the best examples of all of the state's natural ecosystems, and that designation as Missouri Natural Areas was the highest use for these special lands. Once designated, they would be managed to protect or enhance their natural values.

The Missouri Natural Areas also provided for registration of natural areas owned by other agencies, organizations, corporations and individuals through a cooperative agreement with these owners. This registration program extended the scope of the natural areas system to include areas on other public and private land.

Before an area is designated as a Missouri Natural Area, it undergoes a careful nomination process which includes review by the Missouri Natural Areas Committee and approval by the Conservation Commission or the director of the Department of Natural Resources, depending upon which agency will manage or register the area.

At this time there are 129 Missouri Natural Areas encompassing about 18,453 acres. These areas are owned by the Conservation Department, Department of Natural Resources, The Nature Conservancy, Missouri Prairie Foundation, L-A-D Foundation, Army Corps of Engineers, University of Missouri, National Park Service, U.S. Forest Service, Kansas City Parks and Recreation Department and many others.

Some of these natural areas are scenic and accessible. Others are remote and must be located on foot with map and compass. Some areas can withstand considerable human traffic without harm. Others easily could be harmed

by overuse. Some areas contain native Missouri habitats that were once abundant, such as prairies, streams, oak-hickory forests and limestone glades. Others contain rare or endangered species or unique features that have always been uncommon, such as large springs, natural bridges and sinkhole ponds.

What values do these natural areas offer? Why should they be protected? Natural areas are a type of natural resource containing undisturbed habitats. They can be used as research areas for comparison with more modified habitats and as places to study plants, animals and their interrelationships.

Natural areas and their animals and plants are genetic reservoirs of living wild species of potential use to man. They can be home for rare, threatened or endangered species. Our domesticated livestock, food crops, pets and garden flowers all have their roots in the natural world. We have used only a tiny fraction of the world's plants and animals in this way. Natural areas may contain the penicillin, corn and potatoes of the future—just waiting to be discovered.

Natural areas can be valuable educationally as outdoor classrooms, settings for nature interpretation activities and places for individual nature study and appreciation. The simple beauty of some can provide pleasure and inspiration.

Natural areas are also part of our cultural heritage. They represent the environment of the Indians—the environment that the Spanish, French and American explorers and pioneers fought, overcame and, in many instances, destroyed. A region's history and culture is influenced by the surrounding natural environment. In fact, some of the roots of our uniquely American culture may be exposed in natural areas.

At the time our Indian was fashioning the dart point beside the sinkhole pond, the region that we now call Missouri was one big natural area. Upland and bottomland forest covered roughly two-thirds of Missouri. Prairie covered most of the rest. Where forest soil was extremely thin and exposure was harsh, sparsely wooded glades occurred. Savannas with prairie vegetation under scattered trees formed in the broad transition zones where the prairies met the forests.

Although the elk and bison have vanished from Missouri, prairie chickens still thrive at places such as Taberville Prairie, Osage Prairie and Regal Prairie in Prairie State Park. These prairies are large enough to provide the same sense of openness, vastness and beauty that the Indians, explorers and pioneers must have experienced. Upland sandpipers, woodcocks, northern harriers, Swainson's hawks, short-eared owls, deer, coyotes and northern crawfish frogs use these prairies. Blazing star, big and little bluestem grass and rattlesnake master are some of the hundreds of interesting plants. Glade-like sandstone outcrops and stony prairie headwaters streams are other environments on these prairies.

Primitive Missouri had vast cypress and tupelo swamps and bottomland hardwood forests of the Mississippi River lowlands—lands, chutes and sloughs of the great rivers; caves, springs, sinkholes typical of a limestone geology and many other types of natural features. Many of these are found in the Missouri Natural Areas System, as a few examples will show.

Cash Swamp Natural Area in Dunklin County protects an awesome cypress and tupelo swamp forest with its reptiles, water birds and aquatic life along the St. Francois River. Big Oak Tree Natural Area in Mississippi County, with its state-champion trees, takes one back to the majestic bottomland hardwood forests of the Mississippi River lowlands. Red-shouldered hawks, prothonotary warblers, Mississippi kites and cottonmouths live here as they always have, unaware that their home has become an island surrounded by intensive agriculture. Allred Lake Natural Area in Butler County features centuries-old cypress and tupelo trees ringing a natural slough pond.

White River Balds Natural Area features 150 acres of limestone glade in the White River Hills country of Taney County. Lichen Glade Natural Area in St. Clair County differs by having sandstone rather than limestone bedrock. Another sandstone glade, Bona Glade, has among its flora a little plant called *Geocarpon*, one of the rarest plants in North America. *Geocarpon* is so obscure that it does not even have a common name.

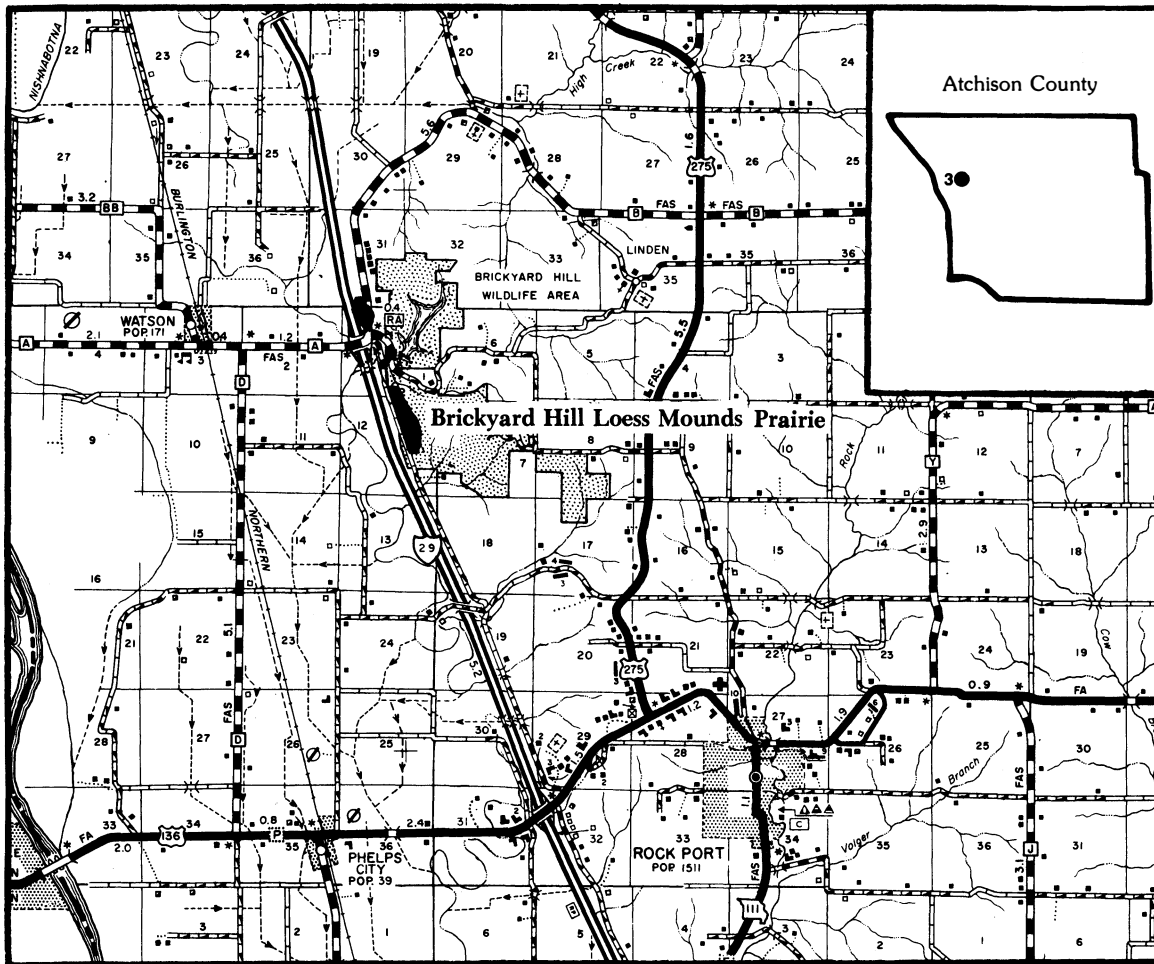
Clifty Creek Natural Area in Maries County features a scenic natural bridge, an Ozark stream, steep limestone bluffs and Ozark forests. A knifelike limestone ridge with towers and arches overlooks The Pinnacles Natural Area in Boone County.

Sinkhole ponds are represented by Pickerelweed Pond Natural Area in Lincoln County and Peck Ranch Pond Natural Area in Carter County. Sinkholes, collapsed caverns, springs and a natural bridge make Ha Ha Tonka Karst Natural Area one of Missouri's best examples of these geological features.

Headwater streams from many parts of the state have been designated as aquatic Natural Areas. Peck Ranch Headwaters Stream Natural Area in Carter County protects almost seven miles of a pristine Ozark stream. Sections of Locust Creek, Big Sugar Creek, Bryant Creek and Coonville Creek natural areas also have been designated.

The Missouri Natural Areas System has made a good start toward preserving the original natural features of the state, but much work remains to be done. Some natural features and some regions are still not well represented. For example, designated prairie natural areas are mostly south of the Missouri River, yet almost half of the area north of the river was prairie when the settlers first arrived. How much native prairie remains north of the Missouri River? Are the narrow strips along some of the railroad tracks all that is left? Or are there still some large unplowed tracts? Comprehensive natural area inventory work throughout the state is beginning to answer these questions.

The Missouri Natural Areas Committee, and the cooperating agencies, organizations, corporations and individuals, have provided a firm foundation for protecting natural areas. The Missouri Natural Areas System will help ensure our natural heritage for today's enjoyment and study, as well as for the future.



Brickyard Hill Loess Mounds Prairie Natural Area

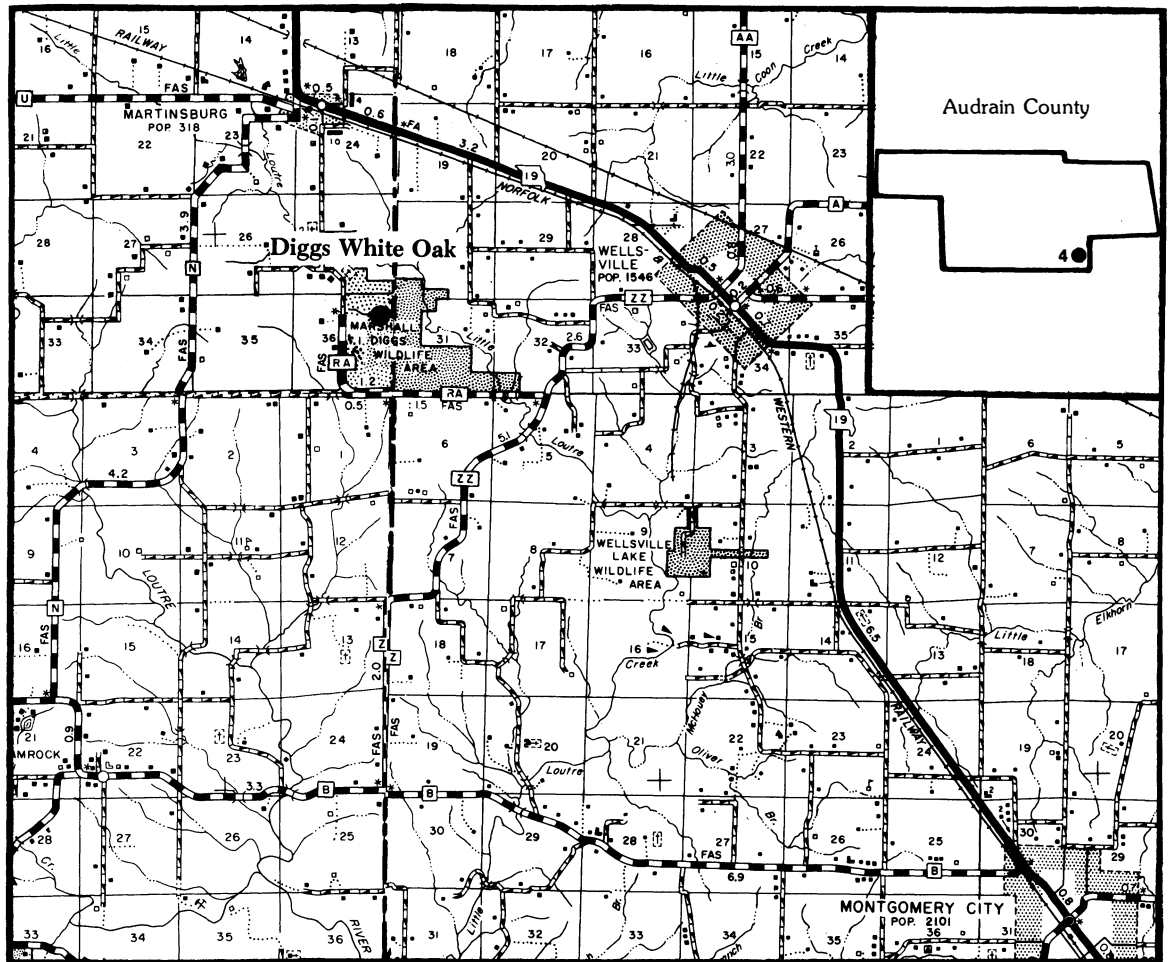
A 125-acre area located within Brickyard Hill Wildlife Area, six miles northwest of Rock Port on I-29 at the Hwy A junction near Watson. Access is by foot from the parking area near Charity Lake or from the county road that forms the west boundary of the natural area. Located in parts of Sec. 1 and 12, T65N, R41-42W, Rock Port 7.5 min. topographic map. Designated December 20, 1971.

Natural Features—Prairie and forest on rugged loess mounds of the Western Section of the Glaciated Plains Natural Division. The prairie on these loess ridges harbors plants that are common further west in the Great Plains, but are rare in Missouri. These plants include soapweed (*Yucca* var. *glauca*), downy painted cup (*Castilleja sessiliflora*), plains muhly grass (*Muhlenbergia cuspidata*), hairy grama grass (*Bouteloua hirsuta*) and silvery scurf pea (*Psoralea argophylla*). The natural area is a part of Brickyard Hill Wildlife Area and is owned by the Department of Conservation. Area regulations apply. For further information contact the Wildlife District Supervisor, Department of Conservation, 3408 Ashland, St. Joseph, Missouri 64506, phone 816/233-3212.



Soapweed (*Yucca glauca* var. *glauca*)

GARY REESE



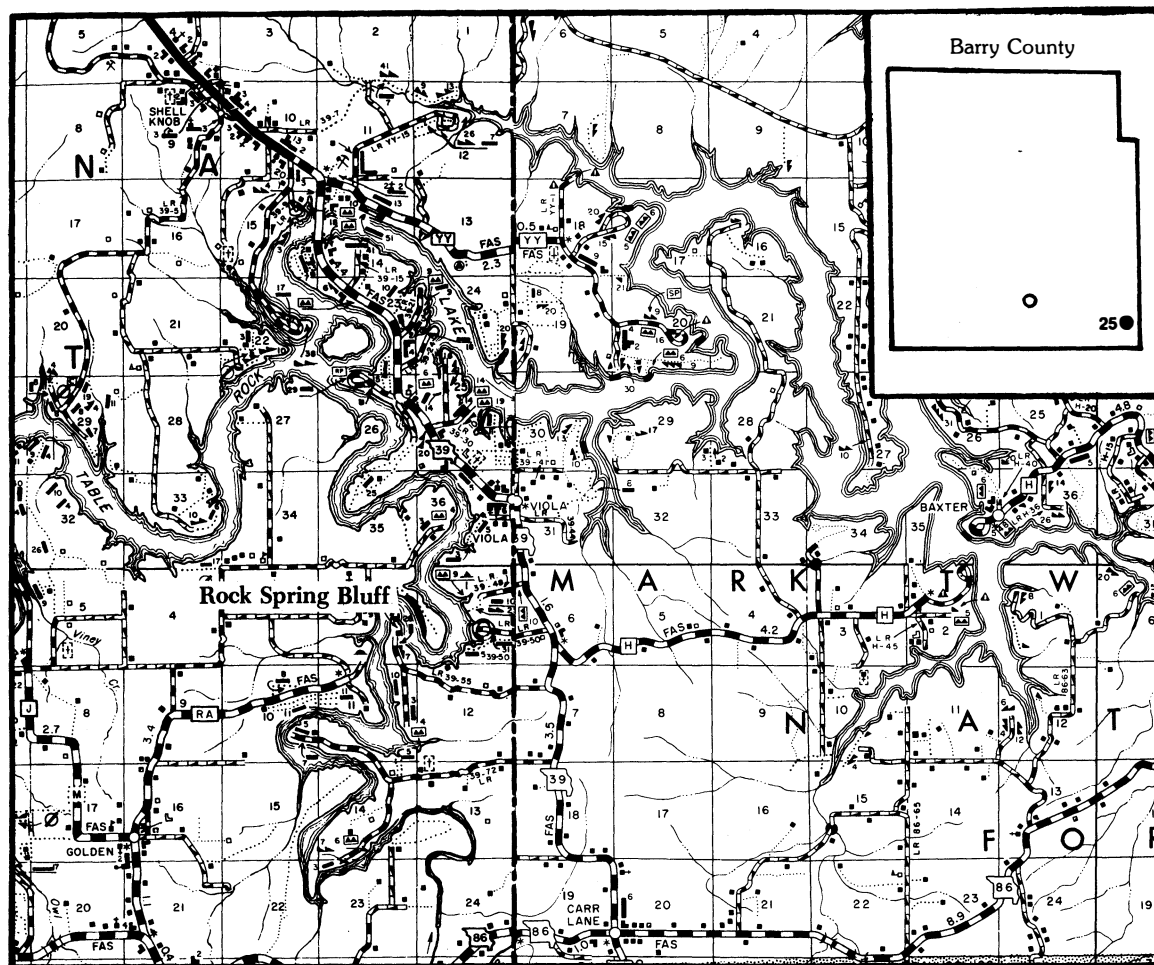
Southern flying squirrel

CHARLES W. SCHWARTZ

Diggs White Oak Natural Area

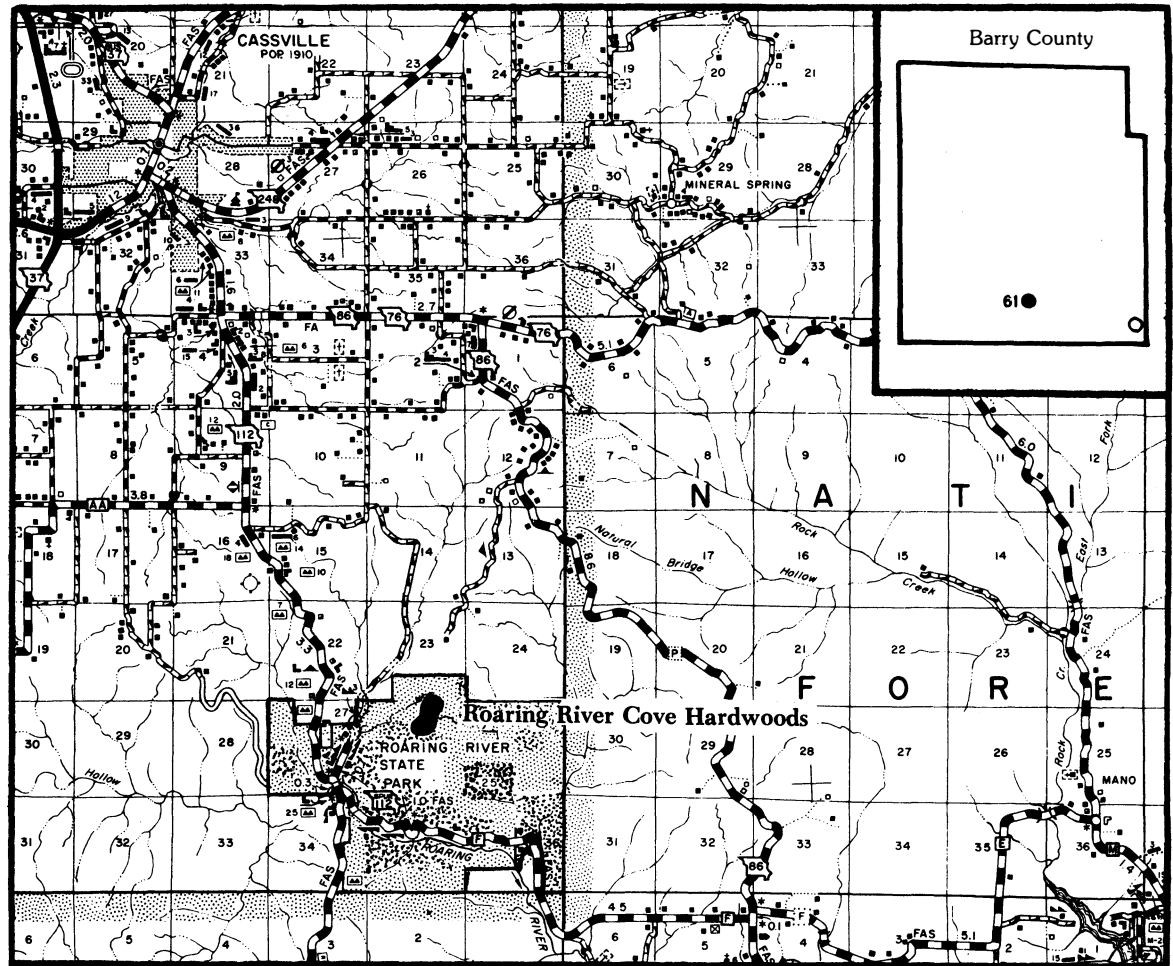
A three-acre portion of the 1,015-acre Marshall I. Diggs Wildlife Area, 2½ miles south of Martinsburg on a gravel road off Hwy 19, in Sec. 36, T50N, R7W, Martinsburg 7.5 min. topographic map. Access is by foot from an interior area road. Designated December 20, 1971.

Natural Features—This small stand of white oak trees more than 100 years old represents dry-mesic upland forest of the Eastern Section of the Glaciated Plains Natural Division. Diggs White Oak Natural Area is owned and managed by the Department of Conservation. Marshall I. Diggs Wildlife Area regulations apply. For further information contact the Wildlife District Supervisor, Box 13, Ashburn, Missouri 63433, phone 314/754-6171.



PAUL NELSON

Xeric limestone forest at Rock Spring Bluff Natural Area



Rock Spring Bluff Natural Area

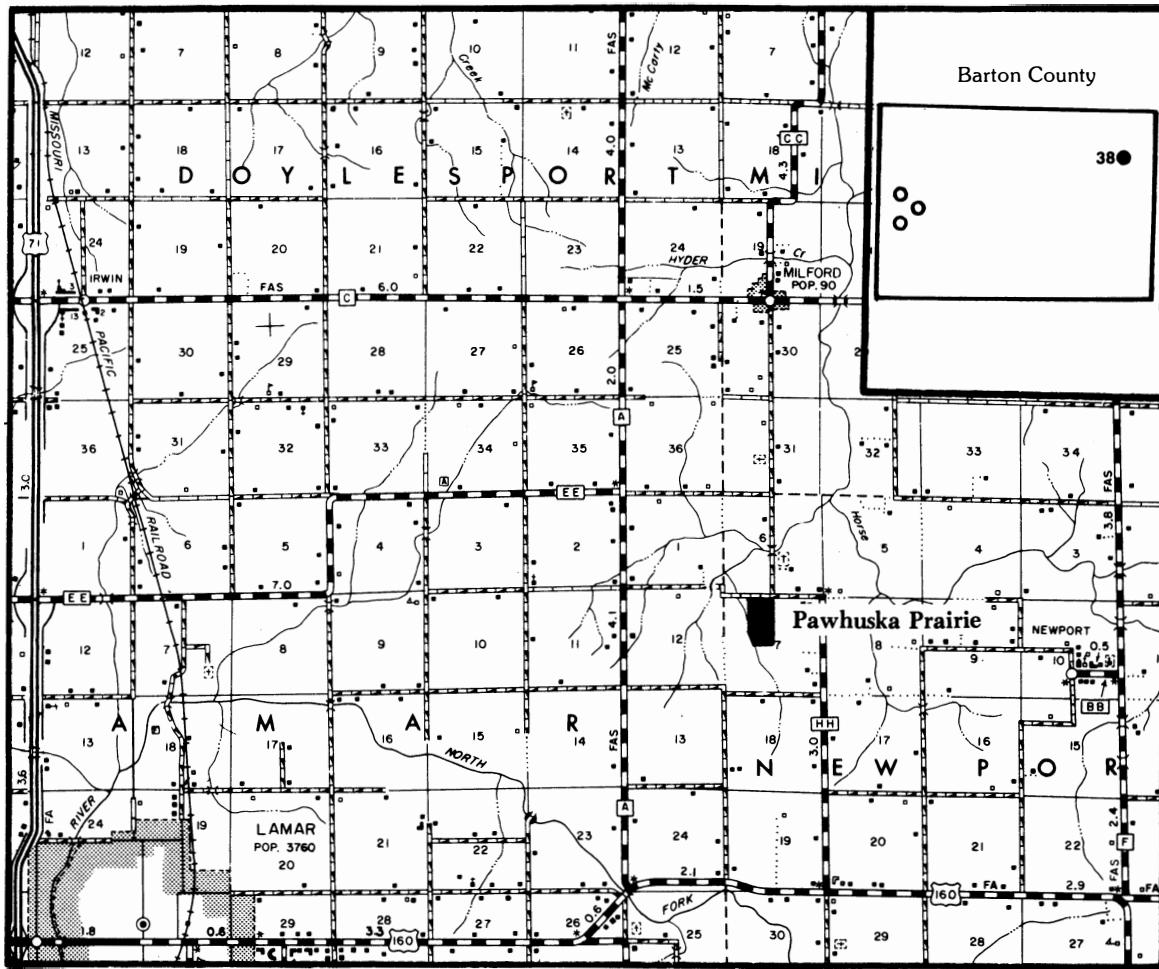
A 20-acre area about five miles northeast of Golden on the Kings River Arm of Table Rock Lake in Sec. 1 and 2, T 21N, R25W, Viola 7.5 min., topographic map. Access is from the lake or by private road that runs along the hogback ridge. Designated December 18, 1973.

Natural Features—A dry, open forest community on a limestone bluff. This is one of the few sites in the state where Ashe juniper, red cedar and shortleaf pine, the three native upland conifers, occur together. Some of the Ashe junipers are ancient—over 500 years old. This tree is restricted in Missouri to the White River Section of the Ozark Natural Division. Rock Spring Bluff Natural Area is owned by the U.S. Army Corps of Engineers, Little Rock District, and is licensed to the Department of Conservation for management. For further information contact the District Forester, Neosho Forest District, Box 157 (Bus. 71 South), Neosho, Missouri 65804, phone 417/451-4158; or U.S. Army Corps of Engineers, Table Rock Lake, Branson, Missouri 65616.

Roaring River Cove Hardwoods Natural Area

A 120-acre portion of Roaring River State Park, portions of Sec. 23 and 26, T22N, R27W, Eagle Rock 7.5 min., topographic map. Designated June 5, 1978.

Natural Features—Old growth, dry upland forest and limestone ledges on deeply dissected cherty hills in the White River Section of the Ozark Natural Division. The area features an old growth stand of black oak, white oak, red oak, post oak and shagbark hickory on rocky chert slopes with an understory of flowering dogwood and serviceberry. Basswood, black walnut, white oak and an understory of sugar maple and eastern hop hornbeam are found in richer, more protected coves. The endangered Ozark chinquapin tree (*Castanea ozarkensis*) occurs here. A total of 66 bird species has been recorded from the site. The natural area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Roaring River State Park, P.O. Box D, Cassville, Missouri 65625, phone 417/847-2539.



Pawhuska Prairie Natural Area

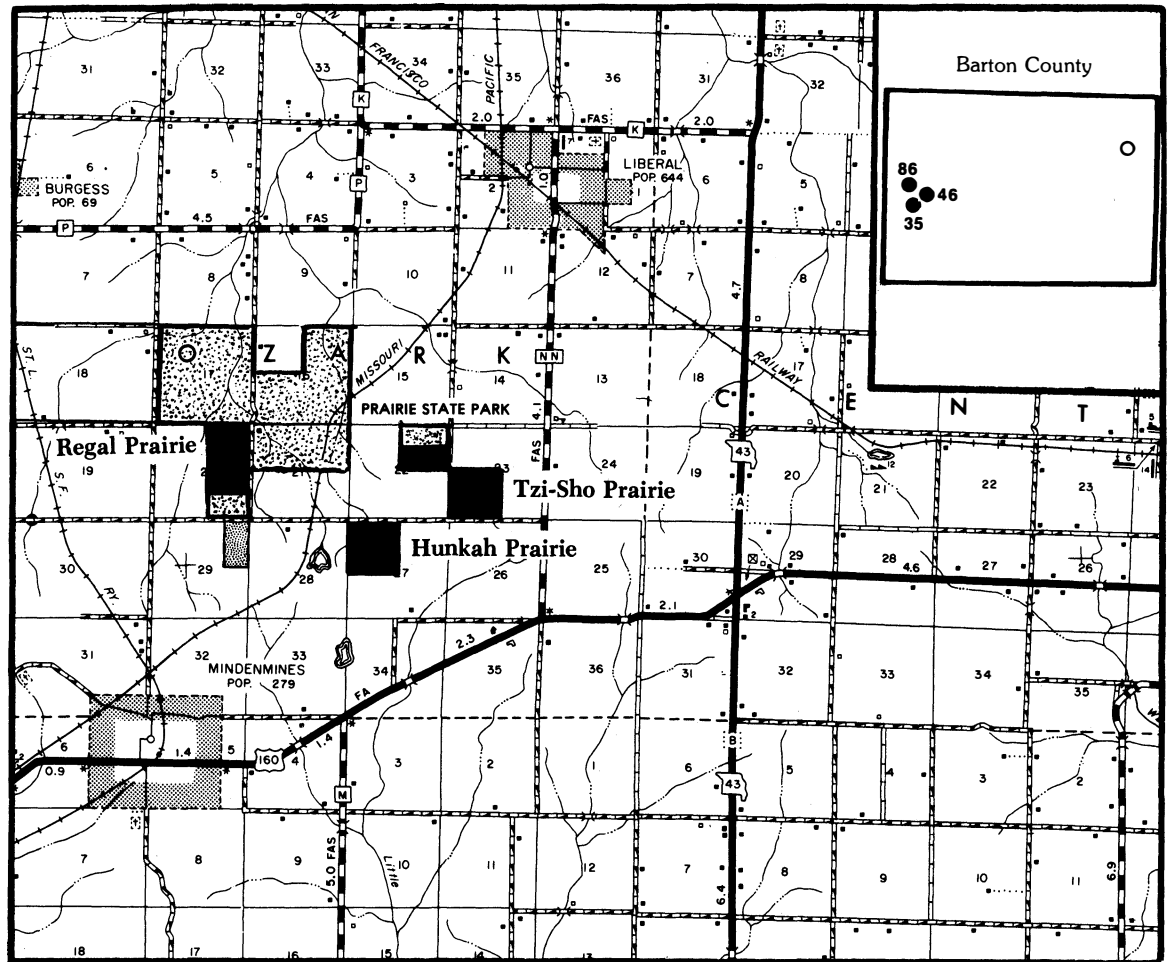
A 77-acre area located about six miles east of Lamar, E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 7, T32N, R29W, Milford 7.5 topographic map. Access is from a county road off Hwy HH. Designated August 26, 1975.

Natural Features—This remnant of upland tallgrass prairie of the Osage Plains Natural Division has a permanent spring associated with a sandstone ledge and a variety of wildlife. The predominant soils are Barco and Collinsville fine sandy loams. Blue star (*Amsonia tabernaemontana*), Selenia (*Selenia aurea*) and the state-endangered Harvey's beak-rush (*Rhynchospora harveyi*) are unusual plants that occur here. Pawhuska is an Osage word meaning "white-haired," a name used by three Osage chiefs. Pawhuska Prairie is owned by The Nature Conservancy and leased to the Department of Conservation. It is a wildlife refuge. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.

Hunkah Prairie Natural Area

A 160-acre area located 12 miles west of Lamar on Hwy 160, one mile north on County Hwy NN, then 1 $\frac{1}{2}$ miles west on a gravel road. Located in the NW $\frac{1}{4}$ Sec. 27, T32N, R33W, Liberal 7.5 min. topographic map. Designated August 26, 1975.

Natural Features—This nearly flat upland prairie over fine sandy and silt loam soils in the Barden and Parsons soil series is a remnant of tallgrass prairie of the Osage Plains Natural Division. Northern harriers, Henslow's sparrows and prairie chickens use the area. Hunkah is the Indian word for the "Earth People," one of the grand divisions of the Osage nation. Hunkah Prairie is owned by The Nature Conservancy and leased to the Department of Conservation. Hunkah Prairie is a wildlife refuge and hunting is prohibited. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



Tzi-Sho Prairie Natural Area

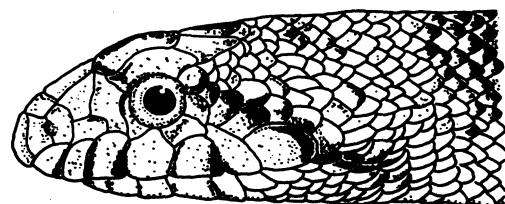
A 240-acre area about three miles south of Liberal on a gravel road. Part of Sec. 22 and 23, T32N, R33W, Liberal 7.5 min. topographic map. Designated April 16, 1976.

Natural Features—Rolling upland prairie over sandy and silt loam soils of the Parsons, Barden and Collinsville series. This is a remnant of the tallgrass prairie of the Osage Plains Natural Division. Northern harriers, short-eared owls, upland sandpipers, prairie chickens and Henslow's sparrows use this prairie. *Tzi-Sho* is the word for the "Sky People," one of the grand divisions of the Osage Indians. Tzi-Sho Prairie is owned by The Nature Conservancy and the Department of Natural Resources. One hundred and sixty acres is leased to the Department of Conservation by The Nature Conservancy, and 80 acres is owned by the Department of Natural Resources as part of Prairie State Park. For further information contact Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619; or Park Superintendent, Prairie State Park, P.O. Box 97, Liberal, Missouri 64762, phone 417/843-5221.

Regal Prairie Natural Area

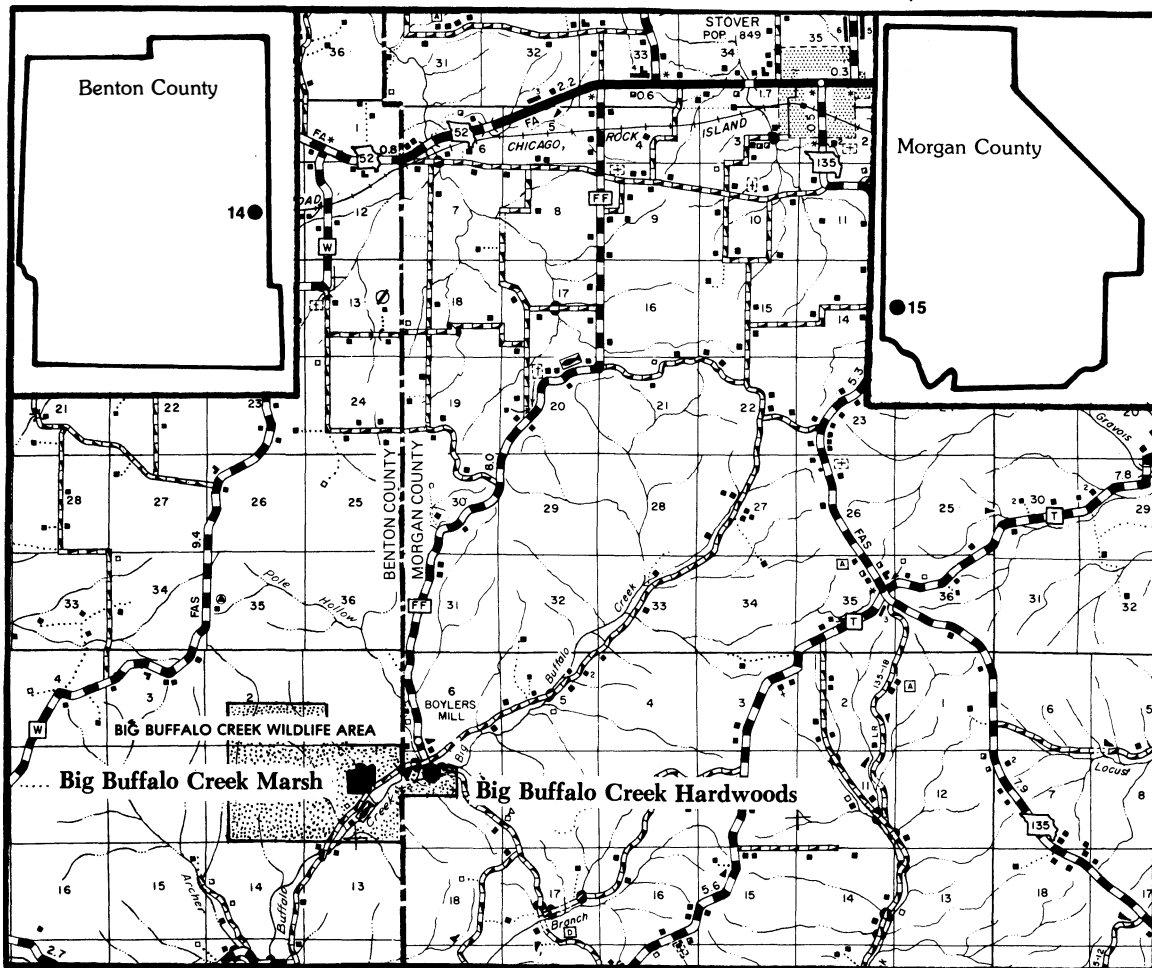
A 240-acre portion of Prairie State Park, NE $\frac{1}{4}$ and N $\frac{1}{2}$ SE $\frac{1}{4}$ of Sec. 20, T32N, R33W, Liberal 7.5 min. topographic map. Designated February 10, 1981.

Natural Features—A high-quality upland prairie on shale residuum in the Osage Plains Natural Division. Plants typical of southwestern Missouri's tallgrass prairie occur here along with characteristic animals, including prairie chicken, northern harrier, scissor-tailed flycatcher, burrowing crayfish, bullsnake and the regal fritillary butterfly. The state park brochure provides additional interpretation of the area's natural history. The area is owned by Missouri Department of Natural Resources. For more information contact the Park Superintendent, Prairie State Park, P.O. Box 97, Liberal, Missouri 64762, phone 417/843-5221.



Bullsnake

TOM R. JOHNSON



Big Buffalo Creek Marsh Natural Area

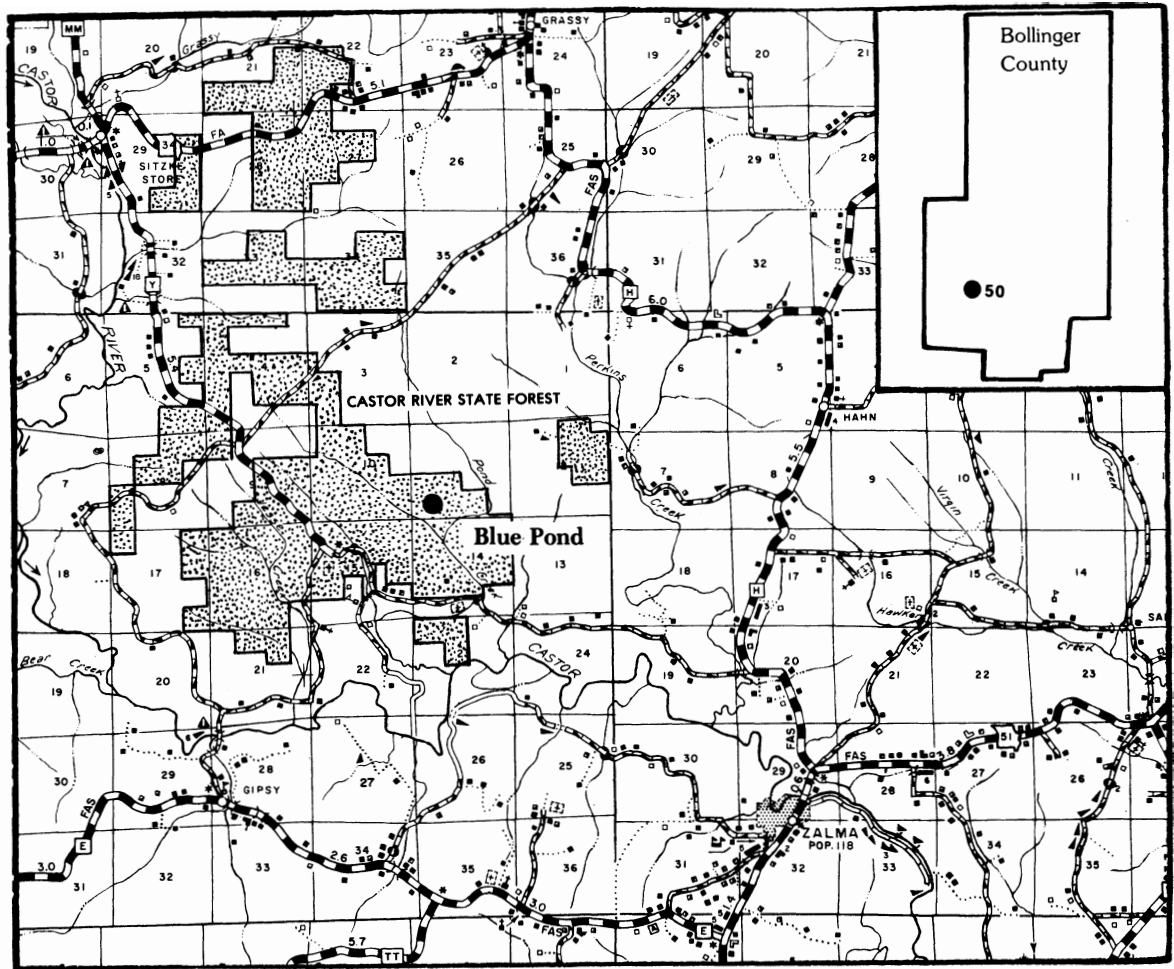
A 40-acre portion of Big Buffalo Creek Wildlife Area ten miles southwest of Stover in SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 12, T41N, R20W, Boylers Mill 7.5 min. topographic map. Access is by county road. Designated June 27, 1972.

Natural Features—A small, spring-fed marshy meadow, spring branch and creek with undisturbed flora and a forested buffer zone in the Upper Ozark Section of the Ozark Natural Division. Sedges dominate the vegetation. Blue flag iris (*Iris virginica*), orange coneflower (*Rudbeckia fulgida*), Ridell goldenrod (*Solidago ridellii*), willow (*Salix* spp.) and the rare bushy aster (*Aster dumosus*) are characteristic fen plants that occur here. The natural area is owned by the Department of Conservation. Regulations for the wildlife area apply. For further information contact the Division of Fisheries, Missouri Department of Conservation, P.O. Box 180, Jefferson City, Missouri 65102, phone 314/751-4115.



Great blue heron

CHARLES W. SCHWARTZ



Blue Pond Natural Area

A 15-acre portion of the Castor River State Forest six miles northwest of Zalma in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11, T29N, R28E, Gipsy 7.5 min. topographic map. Designated October 24, 1977.

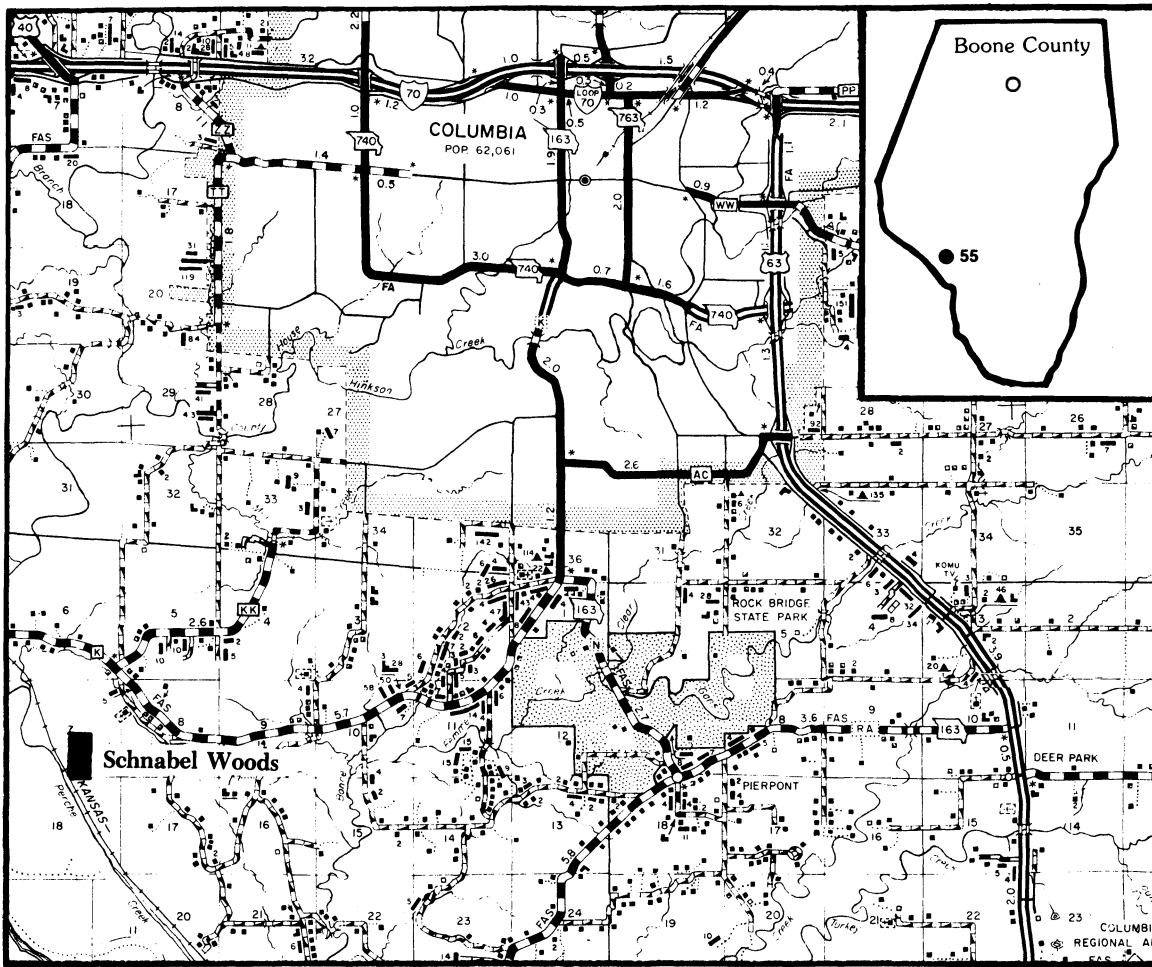
Natural Features—The deepest natural pond in Missouri (about 66 feet), of uncertain origin. Its depth and sheerness make it unlike other sinkholes in the state. It may

have been formed by earth movements caused by the New Madrid Earthquake. Blue Pond Natural Area is owned by the Department of Conservation. To protect the vegetation around the pond's rim, it is closed to wading, swimming, fishing, boating and camping. For further information contact the District Forester, Perryville Forest District, Box 152 (Hwy T), Perryville, Missouri 63775, phone 314/547-4537.



Blue Pond Natural Area

RICHARD THOM



Schnabel Woods Natural Area

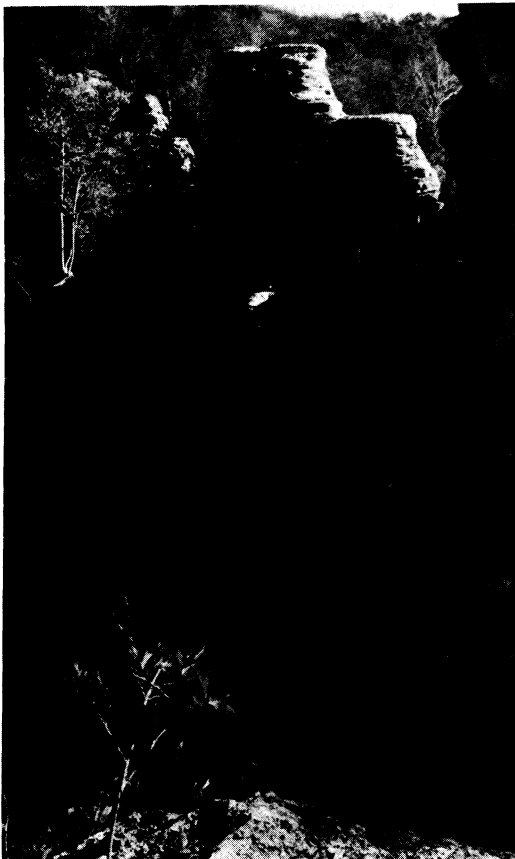
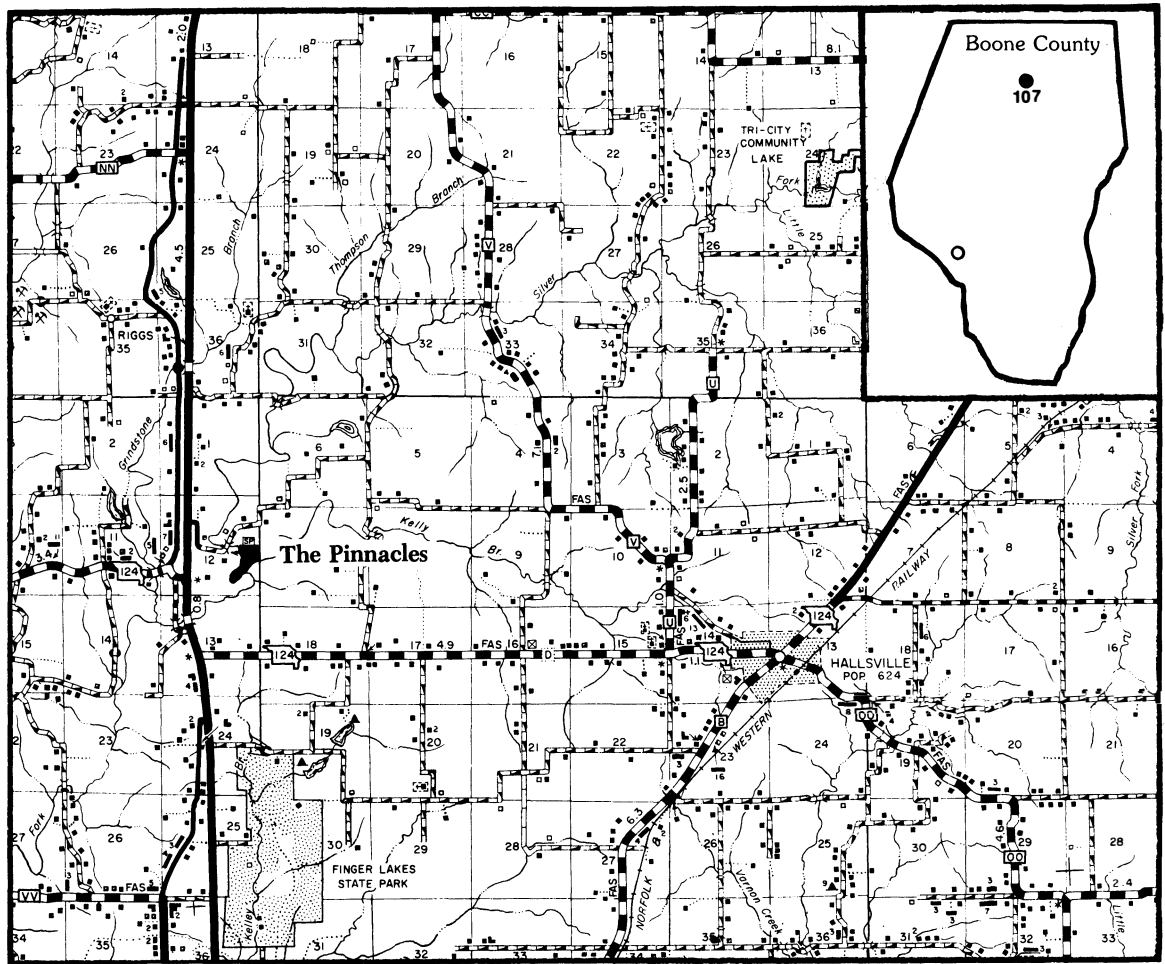
An 80-acre area located about two miles southeast of McBaine in the W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 7, T47N, R13W, Jamestown 7.5 min. topographic map. This area is landlocked and access is difficult. Contact the owner for permission and directions. Designated July 27, 1978.

Natural Features—A rich old growth forest in rugged river hills in the Missouri River Section of the Ozark Border Natural Division. The deep Menfro soils are derived from loess. Sugar maple, basswood, white oak, red oak and hickory are common overstory trees. Two intermittent streams cross the area on their way to Perche Creek. Schnabel Woods is owned by the University of Missouri and managed by the School of Forestry, Fisheries and Wildlife. It is registered with the Department of Conservation. Access is by permission of the owner. For further information contact the Director, School of Forestry, Fisheries and Wildlife, UMC-Columbia, Missouri 65201, phone 314/882-6446.



Raccoon with young

CHARLES W. SCHWARTZ

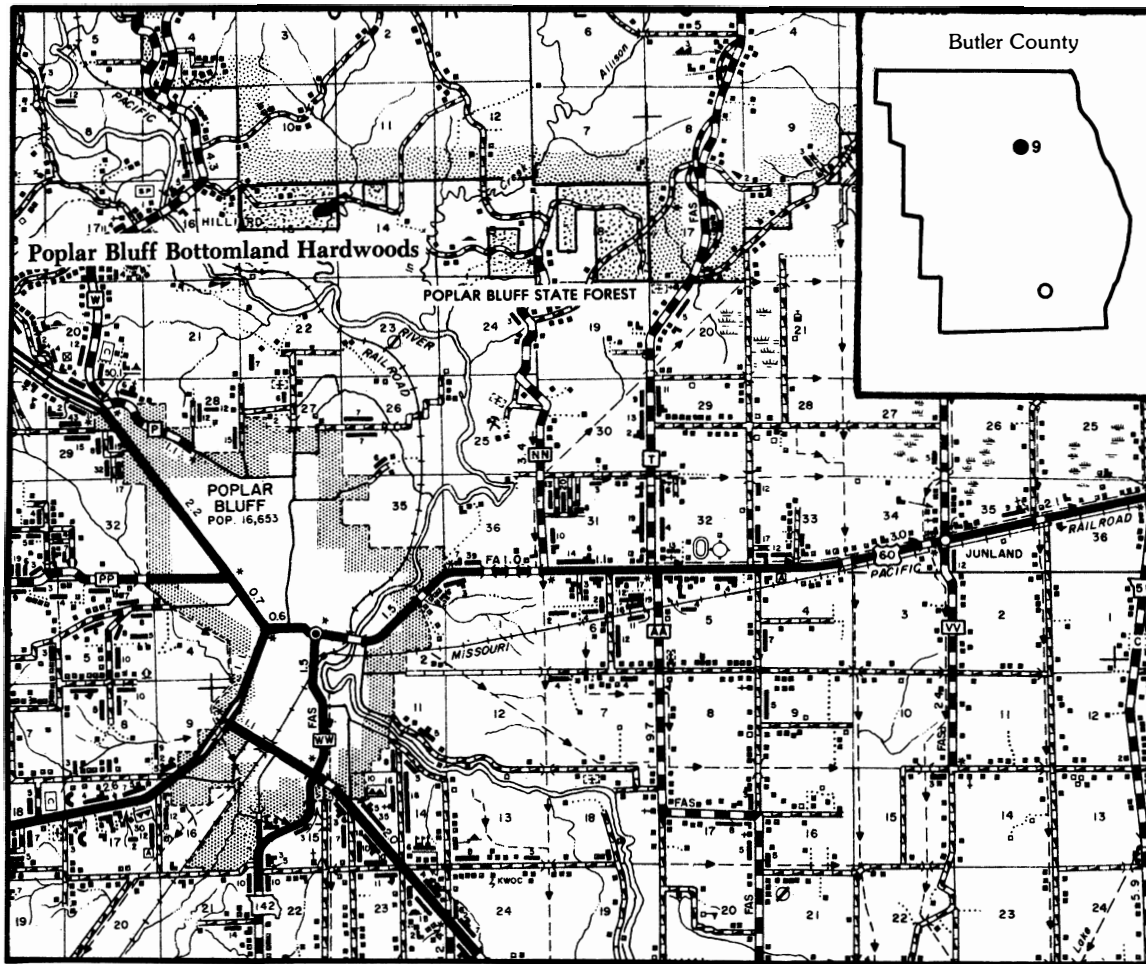


The Pinnacles Natural Area

A 27-acre area about 11 miles north of Columbia off U.S. Hwy 63. Part of Sec. 12, T50N, R13W, Sturgeon 7.5 min. topographic map. Designated January 25, 1983.

Natural Features—This area is significant as both a geologic and aquatic natural area. Rocky Fork and Silver creeks have formed narrows, pinnacles, cliffs and arches in the Burlington limestone. The streams are good examples of aquatic communities of the Ozark Border Natural Division. The Pinnacles Natural Area is part of a 77-acre tract that is owned by the Boone County Pinnacles Youth Foundation with management coordinated through the Boone County Extension Center. It is registered as a Missouri Natural Area with the Department of Conservation. For further information contact the 4-H Specialist, Missouri Cooperative Extension Service, 1408 I-70 Drive SW, Columbia, Missouri 65201, phone 314/449-2541.

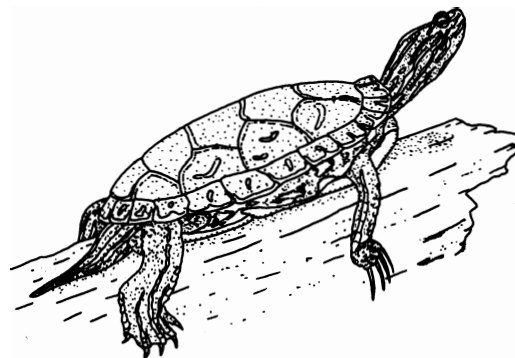
Pinnacles and Silver Fork Creek



Poplar Bluff Bottomland Hardwoods Natural Area

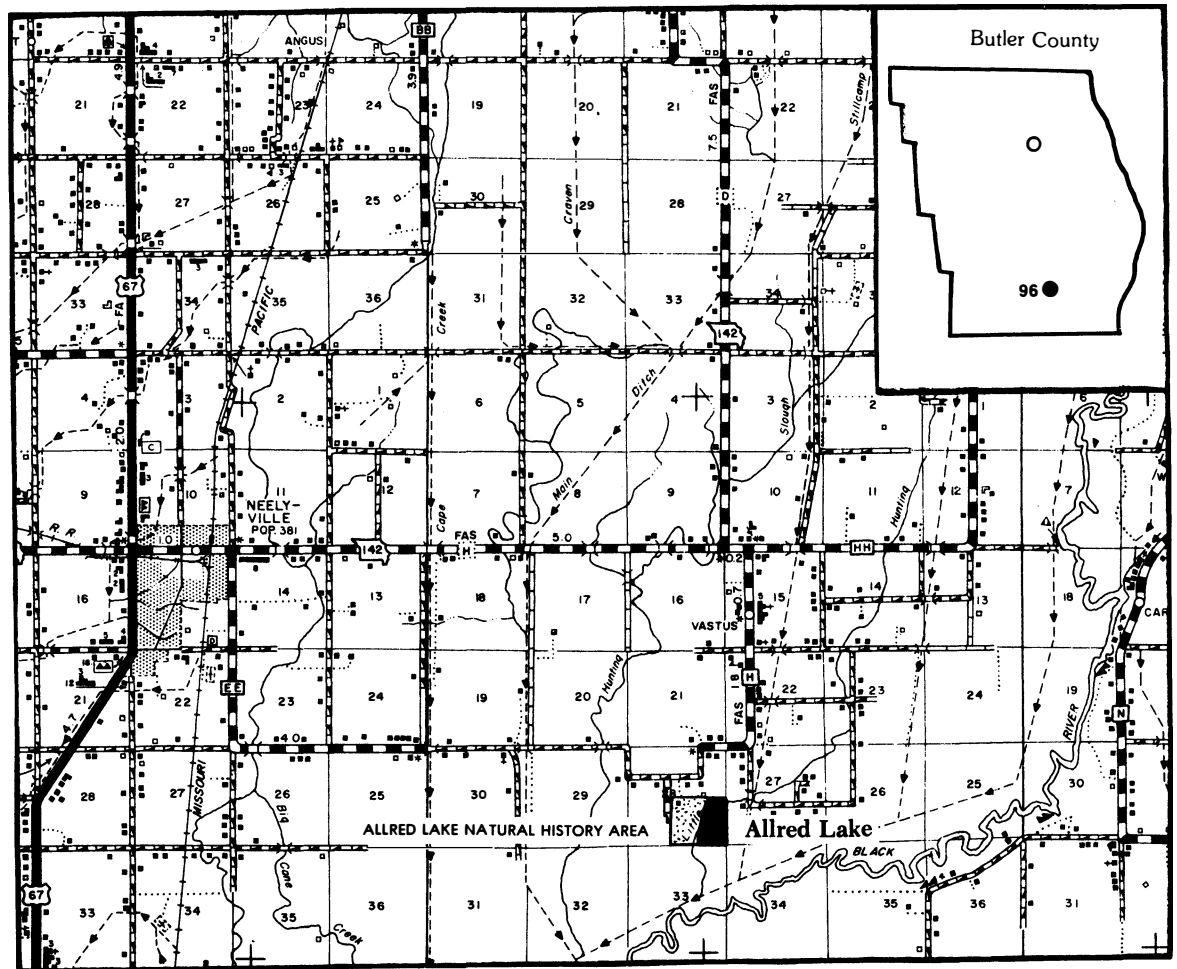
A 19½-acre area within the Poplar Bluff State Forest, four miles north of Poplar Bluff in the SE¼ NE¼ Sec. 15, T25N, R6E, Poplar Bluff 7.5 min. topographic map. Access is by gravel road. Designated December 20, 1971.

Natural Features—A very diverse bottomland forest on deep, productive soils of the Mississippi Lowlands Natural Division. Overstory trees include cherrybark, swamp chestnut, pin and southern red oaks; red, silver and sugar maple; and sweet gum, sycamore, black gum, rock elm and black cherry. The natural area is owned by the Department of Conservation. For further information contact the District Forester, Bootheel Forest District, Box 631 (116 South Eighth St.), Poplar Bluff, Missouri 63901, phone 314/785-2846.



Western painted turtle

TOM R. JOHNSON



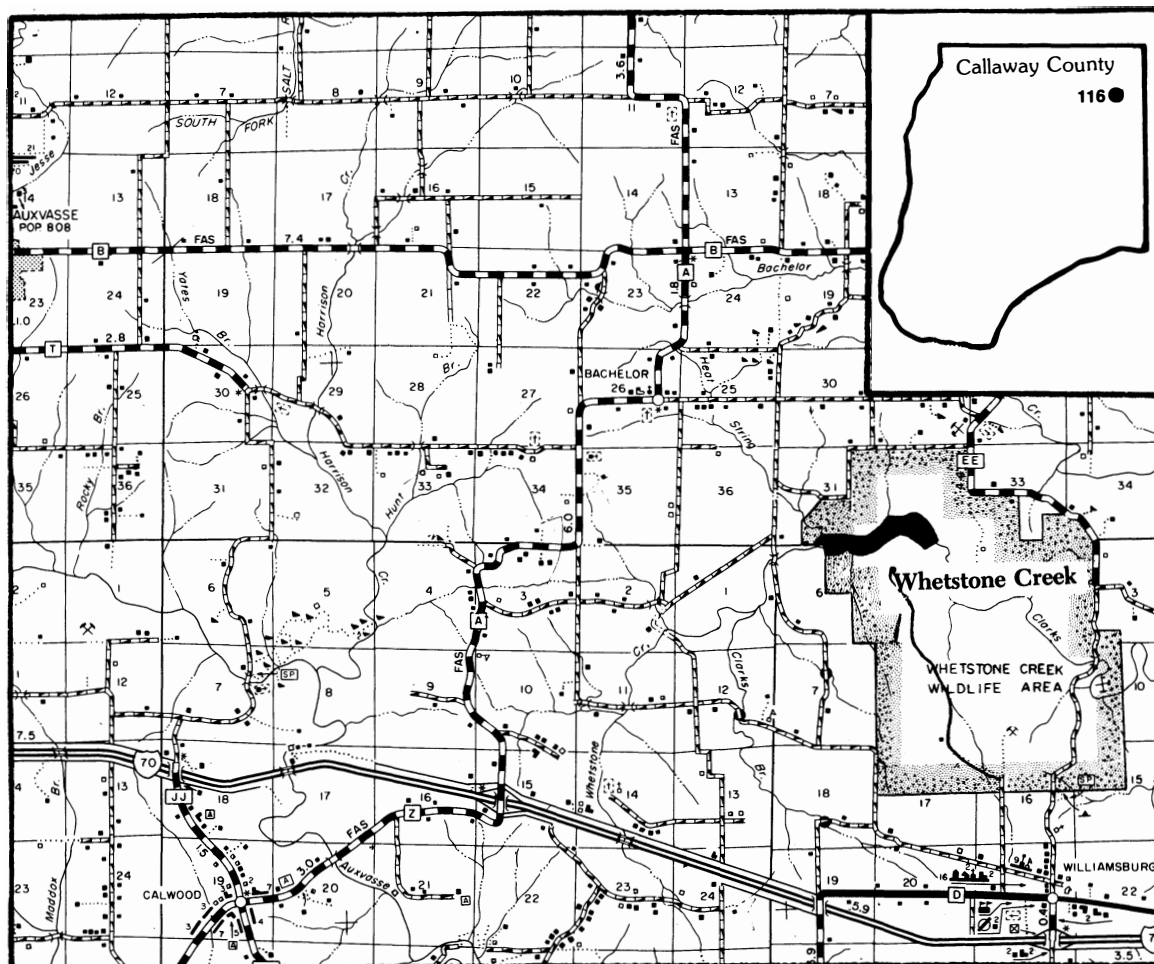
Cypress and tupelo swamp forest at Allred Lake

RICHARD THOM

Allred Lake Natural Area

A 76-acre area located 15 miles south of Poplar Bluff and six miles southeast of Neelyville, accessible by a county-maintained road off Hwy H. Part of the SE $\frac{1}{4}$ Sec. 28, T22N, R6E, Vastus 7.5 min. topographic map. Designated March 22, 1982.

Natural Features—Swamp, slough and bottomland forest with rare species in the Lowland Section of the Mississippi Lowland Natural Division. Ancient cypress and tupelo trees ring this natural pond, probably Missouri's best example of an undisturbed cypress pond. The water harbors two state-endangered fishes: the swamp darter (*Etheostoma fusiforme*) and taillight shiner (*Notropis maculatus*). Trees of the bottomland forest include water locust, sweet gum, pecan and willow, swamp chestnut, water and overcup oaks. The rare Nuttall's oak also grows here. An informational brochure is available for this area. Allred Lake Natural Area is part of a 160-acre tract that is owned by the Department of Conservation. It is a wildlife refuge and is closed to hunting and fishing. Trapping is allowed by special permit. Non-motorized boats are permitted on Allred Lake for day use only. Boats must be carried about a quarter-mile to the lake from the parking area. For further information contact the Area Manager, Otter Slough Wildlife Area, Route 3, Box 388 B, Dexter, Missouri 63841, phone 314/624-5821.

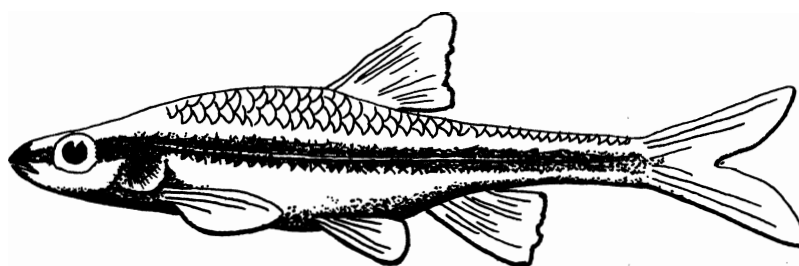


Whetstone Creek Natural Area

An aquatic natural area consisting of 1¾ miles of creek with a 100-yard buffer zone on each side, located about five miles northwest of Williamsburg within the Whetstone Creek Wildlife Area. In parts of Sec. 6, 31 and 32, T48 and 49N, R7W, Williamsburg 7.5 min. topographic map. Access is by foot from a parking lot a half mile south of the natural area. Designated June 20, 1983.

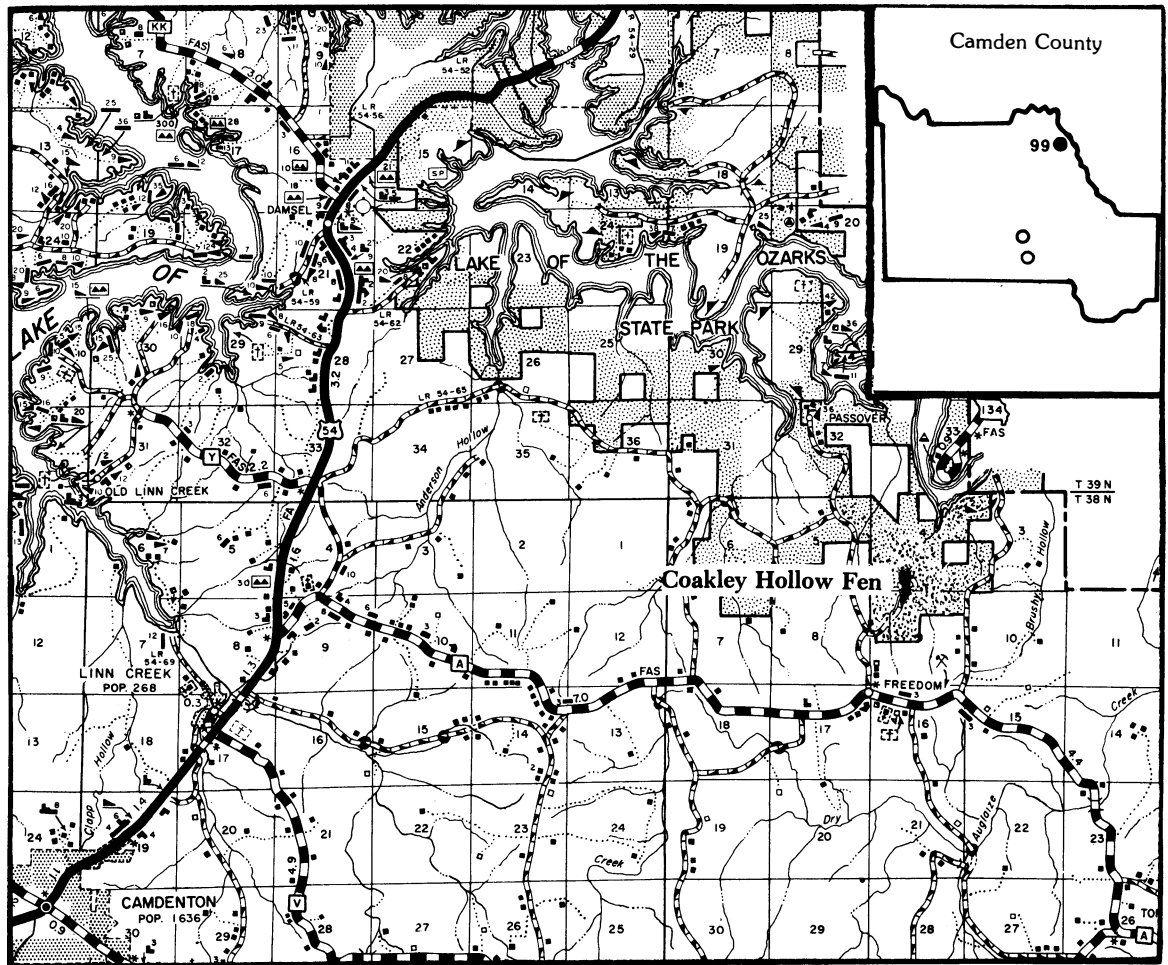
Natural Features—Whetstone Creek is a small, highly productive stream consisting of short, well-defined riffles and long, deep pools in the Missouri River Section of the Ozark Border Natural Division. It supports a diverse fish

population of at least 34 species, including the endangered blacknose shiner (*Notropis heterolepis*). Water willow and spike rush are common aquatic plants. The stream banks are treeless or with a narrow band of sycamore, willow, silver maple and other characteristic floodplain trees. The stream is bordered on one side by steep, wooded bluffs. The natural area is owned by the Department of Conservation. For further information contact the Area Manager, Whetstone Creek Wildlife Area, Box 2, Williamsburg, Missouri 63388, phone 314/254-3330.



Blacknose shiner

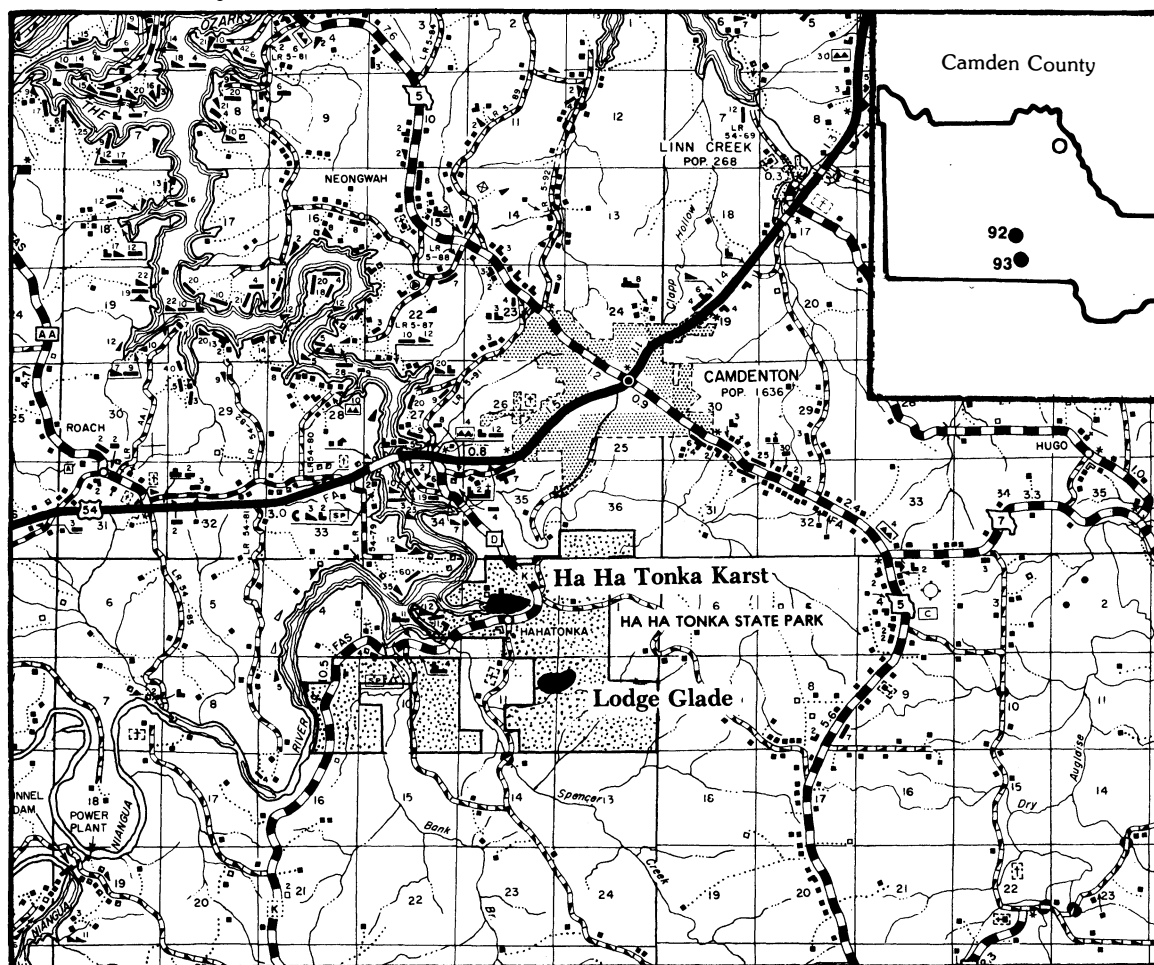
DRAWING ADAPTED FROM LYNNE TAYLOR



Coakley Hollow Fen Natural Area

A four-acre area in the Lake of the Ozarks State Park at Ozark Caverns, SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 4 and a small part of Sec. 9, T38N, R15W, Toronto 7.5 min. topographic map. Designated August 25, 1982.

Natural Features—Swampy, spring-fed meadow (fen), calcareous seeps and spring branch along Coakley Hollow characteristic of the Upper Ozark Section of the Ozark Natural Division. These boglike seeps are sites for a number of northern glacial relicts, including Riddell's goldenrod (*Solidago riddellii*). A trail and boardwalk provide access to the fen. Additional information on the area is included in a self-guiding trail brochure. Department of Natural Resources owns the area. For further information contact the Superintendent, Lake of the Ozarks State Park, Kaiser, Missouri 65047, phone 314/348-2694.



Ha Ha Tonka Karst Natural Area

A 70-acre area within Ha Ha Tonka State Park, Sec. 2, T37N, R17W, Lake Niangua 7.5 min. topographic map. Designated November 30, 1981.

Natural Features—This area is one of the nation's most outstanding geologic areas. It is a classic example of a complex karst site formed from the collapse of a major cave system. Downcutting streams intersected, collapsed and eventually destroyed the cave system which once existed here. The collapse chasm referred to as Ha Ha Tonka canyon, a large spring, several sinkholes, several caves and a natural bridge are prominent karst features. The area lies within the Upper Ozark Section of the Ozark Natural Division. A trail and natural area guide provide information on the natural geologic features. This area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Ha Ha Tonka State Park, Route 1, Box 658, Camdenton, Missouri 65020, phone 314/346-2986.

Lodge Glade Natural Area

A 20-acre glade within Ha Ha Tonka State Park in Sec. 11 and 12, T37N, R7W, Lake Niangua 7.5 min. topographic map. Designated November 30, 1981.

Natural Features—A south-facing dolomite glade interspersed with several calcareous seeps and savanna forest borders typical of the Upper Ozark Section of the Ozark Natural Division. Glade plants found here include Missouri evening primrose, compass plant and silky aster. Character-

Red Sink Natural Area

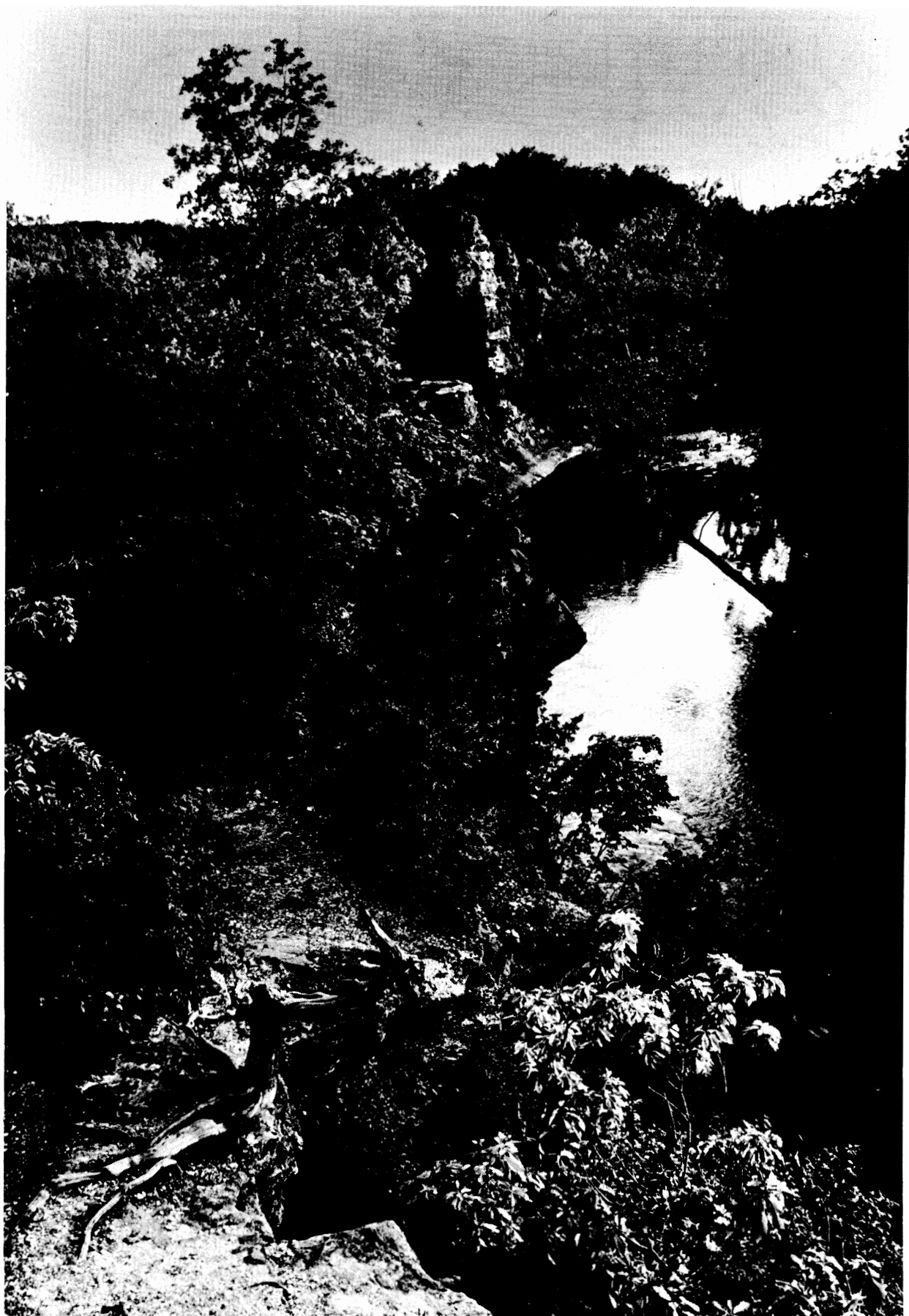
An eight-acre sinkhole in Ha Ha Tonka State Park on the Lake Niangua 7.5 min. topographic map. Designated February 10, 1981.

Natural Features—In the Upper Ozark Section of the Ozark Natural Division, Red Sink is an outlying feature of the Ha Ha Tonka karst complex. Red Sink is an impressive, deep sink with a rich flora and mature sinkhole-floor forest. It represents a relict habitat for the endangered goldie's fern

(*Dryopteris goldiana*). A separate trail and natural area guide which provides detailed information of Red Sink and other natural areas in the park is available. This area is owned by the Department of Natural Resources. For the specific location of Red Sink, contact Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102, phone 314/751-2479.

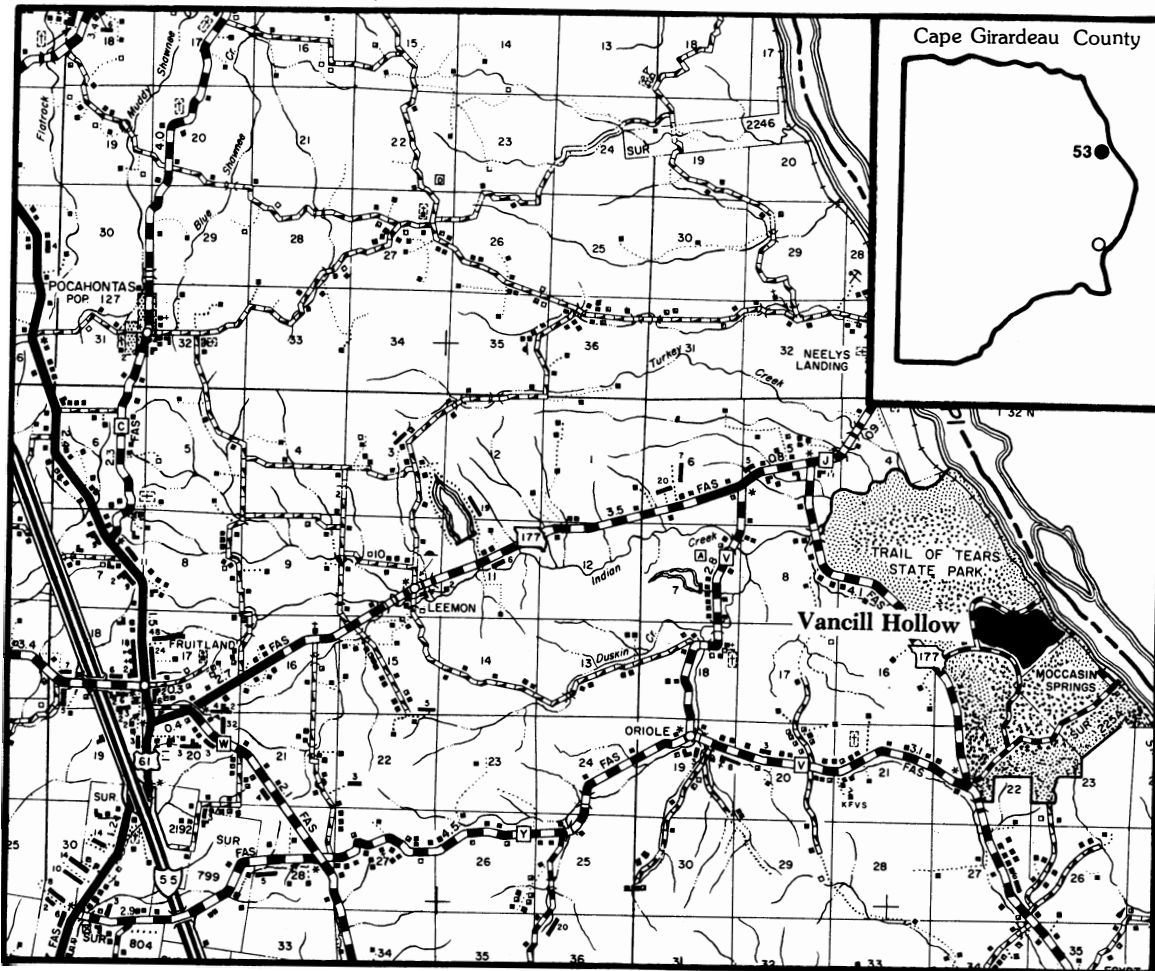
istic animals include the field sparrow, plains scorpion, fence swift and six-lined racerunner. A trail and natural area guide is available for Ha Ha Tonka State Park. The Department of Natural Resources owns Lodge Glade. For further information contact the Park Superintendent at Ha Ha Tonka State Park, Route 1, Box 658, Camdenton, Missouri 65020, phone 314/346-2986.

(*Dryopteris goldiana*). A separate trail and natural area guide which provides detailed information of Red Sink and other natural areas in the park is available. This area is owned by the Department of Natural Resources. For the specific location of Red Sink, contact Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102, phone 314/751-2479.



GARY REESE

View of Silver Creek from The Pinnacles in Boone County (see page 23)



Vancill Hollow Natural Area

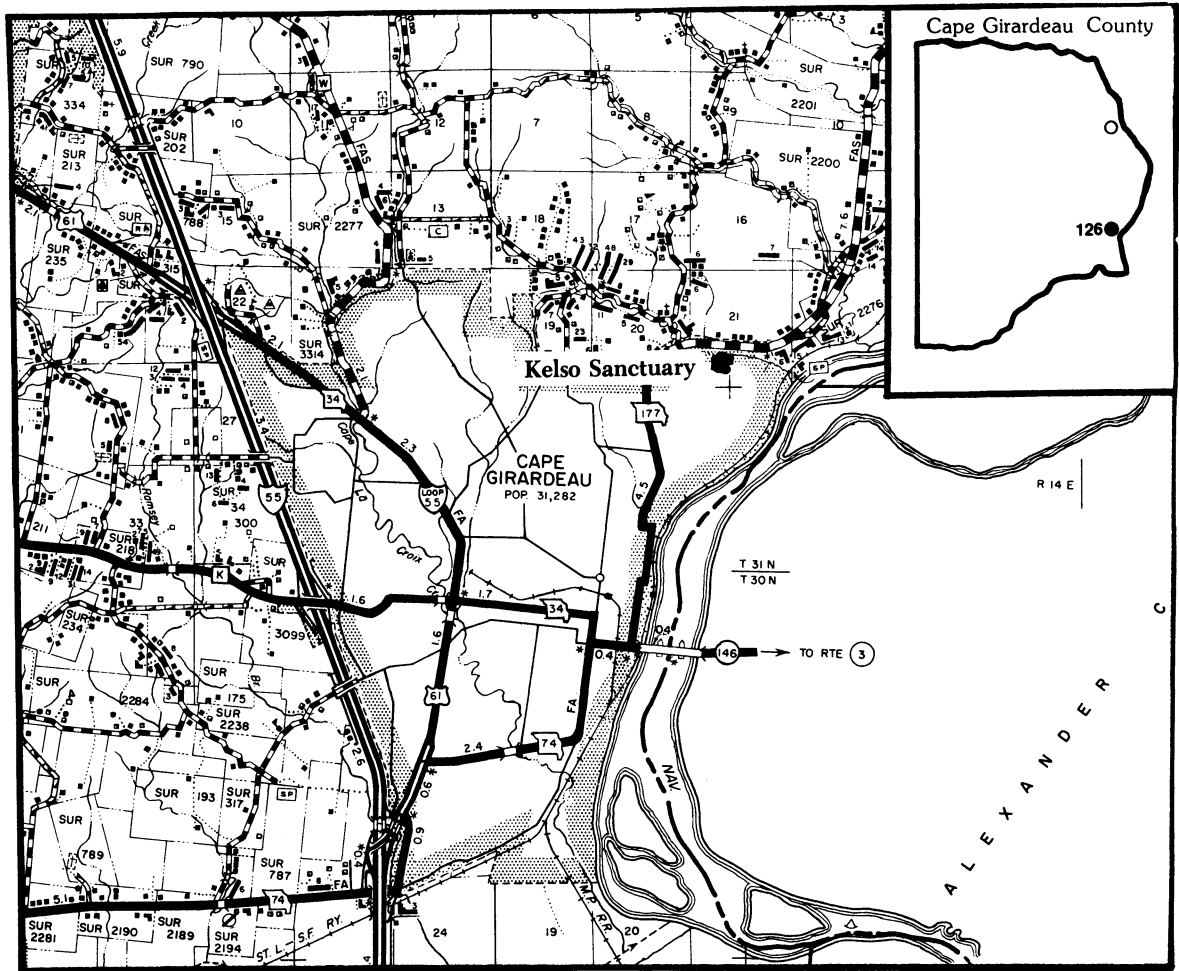
A 300-acre area in Trail of Tears State Park in Sec. 10, 11, 14, 15, T32N, R14E, Ware 7.5 min. topographic map. Designated October 27, 1977.

Natural Features—Vancill Hollow is a complete watershed in the Mississippi River Section of the Ozark Border Natural Division. Found here is an exceptionally rugged riverbrakes terrain supporting a western mesophytic forest. Luxuriant ground cover and the presence of American beech, tulip poplar and cucumber magnolia make this an interesting forest for Missouri. Beechdrops (*Epifagus virginiana*), pennywort (*Obolaria virginica*) and many species of ferns are found in Vancill Hollow. The Department of Natural Resources owns the area. For further information contact Park Superintendent, Trail of Tears State Park, Route 4, Jackson, Missouri 63755, phone 314/334-1711.



Bloodroot (*Sanguinaria canadensis*)

GARY REESE

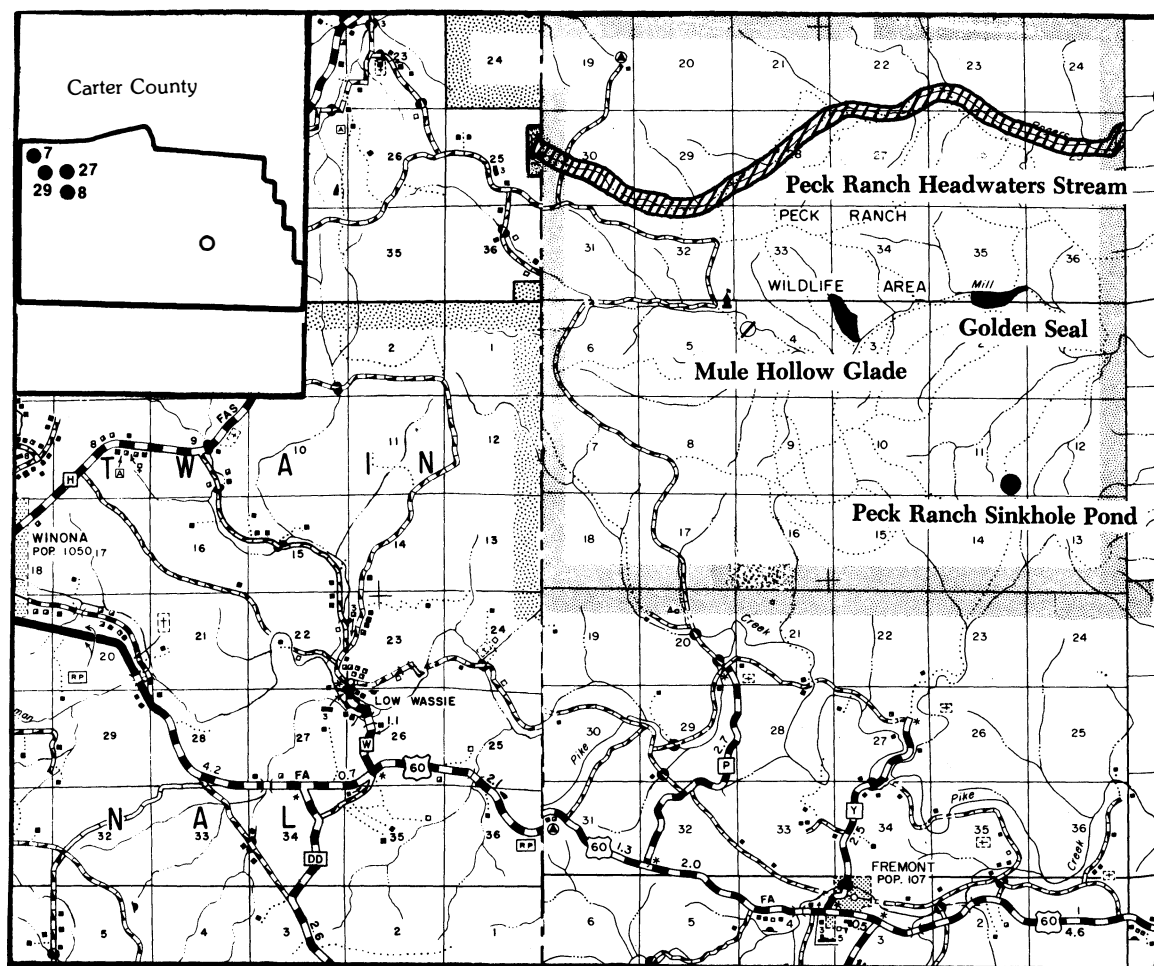


Kelso Sanctuary Natural Area

A 23-acre portion of the I.R. Kelso Wildlife Sanctuary, in Sec. 21, T31N, R14E, Cape Girardeau 7.5 min. topographic map. Designated October 1984.

Natural Features—A rich mesophytic forest of tulip poplar and beech. This particular forest type is common in the eastern United States and reaches its western limit in Missouri. It is restricted to north-facing slopes and protected coves in southeastern Missouri counties. The area is situated along a steep bluff along the Missouri River in the Ozark Border Natural Division. The very steeply dissected ridge and ravines are developed in sedimentary rock with wind blown loess covering the surface. An ephemeral sinkhole pond along the lower slope provides breeding habitat for frogs and salamanders in the early spring. Other forest species found here are northern red oak, shagbark hickory,

spice bush, sassafras, broad beech fern, doll's eyes and the rare pennywort. Students and faculty of Southeast Missouri State University use the area for research and classroom projects. Comprehensive observation lists for birds, mammals, vascular plants, amphibians and reptiles are available for visitors. The natural area is registered with the Department of Natural Resources and is owned by the Audubon Society of Missouri. Southeast Missouri State University cares for the area under a lease agreement with the owner. Additional lands surrounding the natural area are owned by the university. For further information contact Dr. Russell Kullberg, Biology Department, Southeast Missouri State University, Cape Girardeau, Missouri 63701, phone 314/651-2170.



Peck Ranch Headwaters Stream Natural Area

An aquatic area of about 486 acres including all of Rogers Creek within the boundaries of the Peck Ranch Wildlife Area. It is comprised of seven miles of creek with a 100-yard buffer zone on either side, and runs through Sec. 21-23 and 25-30, T28N, R2W, Stegall Mountain 7.5 min. topographic map. Designated December 20, 1971.

Natural Features—One of the best and least-disturbed permanent, spring-fed streams in the Ozarks with many fish species and other forms of aquatic life. The channel consists of alternating short pools and well-defined riffles. The bottom is very stable. Woody vegetation covers the banks and shades the stream. A small, igneous shut-in occurs in the upper reaches. The natural area is owned by the Department of Conservation. It is a wildlife refuge and is closed to fishing, hunting and collecting. For further information contact the Wildlife Area Manager, Peck Ranch Wildlife Area, Winona, Missouri 65588, phone 314/323-4249.

Peck Ranch Sinkhole Pond Natural Area

A one-acre portion of the Peck Ranch Wildlife Area in the SE $\frac{1}{4}$ Sec. 11, T27N, R2W, Stegall Mountain 7.5 min. topographic map. Designated December 20, 1971.

Natural Features—Grassy Pond (the local name of the feature) is a quarter-acre natural sinkhole pond in the Lower Ozark Section of the Ozark Natural Division. It is a breeding place for several species of frogs and salamanders. The shallow pond is thickly vegetated and has only small areas of completely open water. Sedge hummocks create small floating islands on which other plants can grow. The natural area is owned by the Department of Conservation. It is a wildlife refuge. For further information contact the Wildlife Area Manager, Peck Ranch Wildlife Area, Winona, Missouri 65588, phone 314/323-4249.

Golden Seal Natural Area

A 100-acre portion of Peck Ranch Wildlife Area in Sec. 2, T27N, R2W and Sec. 35, T28N, R2W, Stegall Mountain 7.5 min. topographic map. Designated December 18, 1973.

Natural Features—A bottomland forest on well-drained, gravelly soils; a losing stream; and a north-facing upland forest of the Upper Ozark Section of the Ozark Natural Division. Ozark witch hazel and swamp dogwood are abundant along Mill Creek. Golden Seal Natural Area is owned by the Department of Conservation. It is a wildlife refuge. For further information contact the Wildlife Area Manager, Peck Ranch Wildlife Area, Winona, Missouri 65588, phone 314/323-4249.

Mule Hollow Glade Natural Area

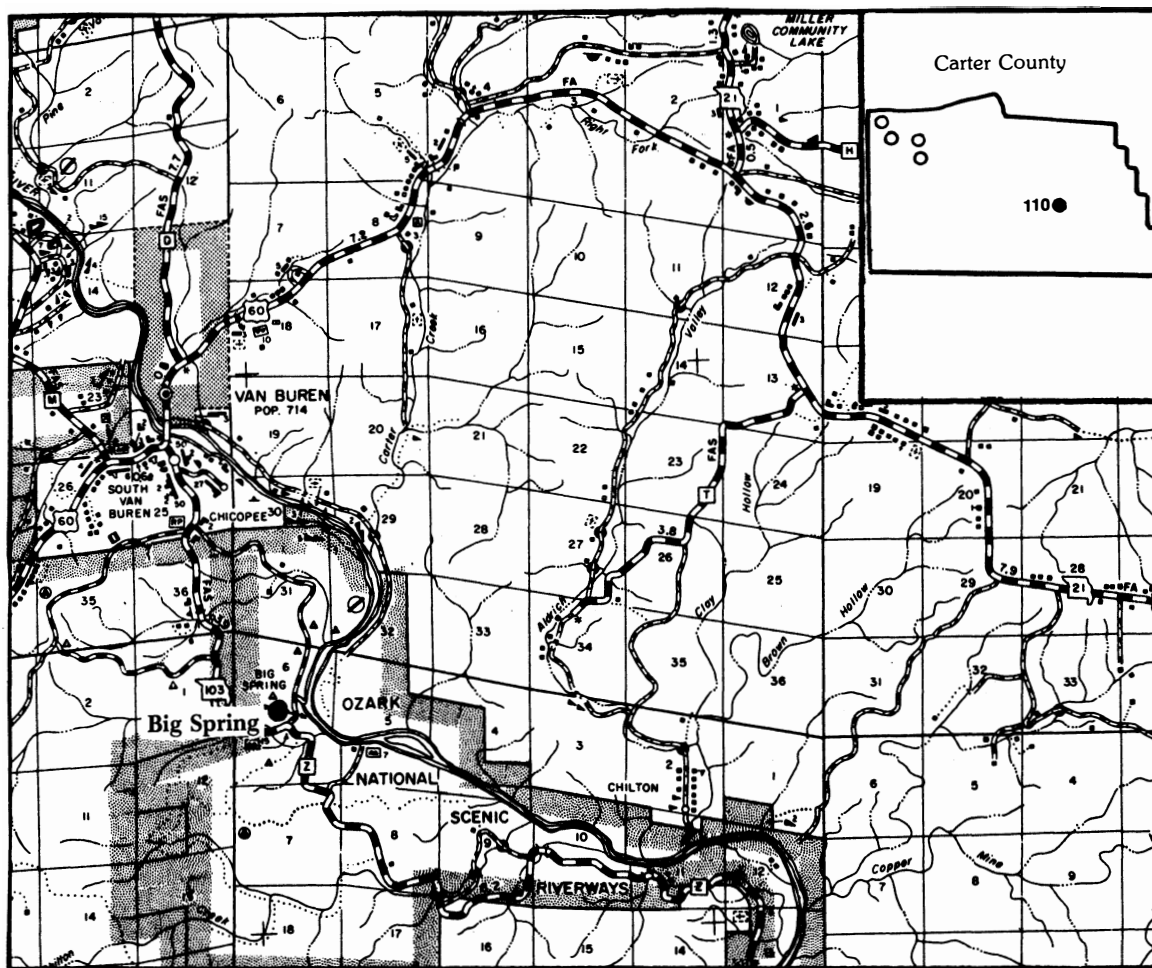
A 44-acre portion of the Peck Ranch Wildlife Area in Sec. 34, T28N, R2W, and Sec. 3, T27N, R2W, Stegall Mountain 7.5 min. topographic map. Designated December 18, 1973.

Natural Features—About 20 acres of glade on Gasconade dolomite with many interesting plants and animals in the Lower Ozark Section of the Ozark Natural Division. Mule Hollow Glade Natural Area is owned by the Department of Conservation. It is a wildlife refuge. For further information contact the Wildlife Area Manager, Peck Ranch Wildlife Area, Winona, Missouri 65588, phone 314/323-4249.



RICHARD THOM

Missouri evening primrose seed capsules on a dolomite glade



Big Spring Natural Area

A 17-acre area within the Ozark National Scenic Riverways approximately four miles southeast of Van Buren, with access via Hwy 103 in Sec. 6, T26N, R1E, Big Spring 7.5 min. topographic map. Designated February 14, 1983.

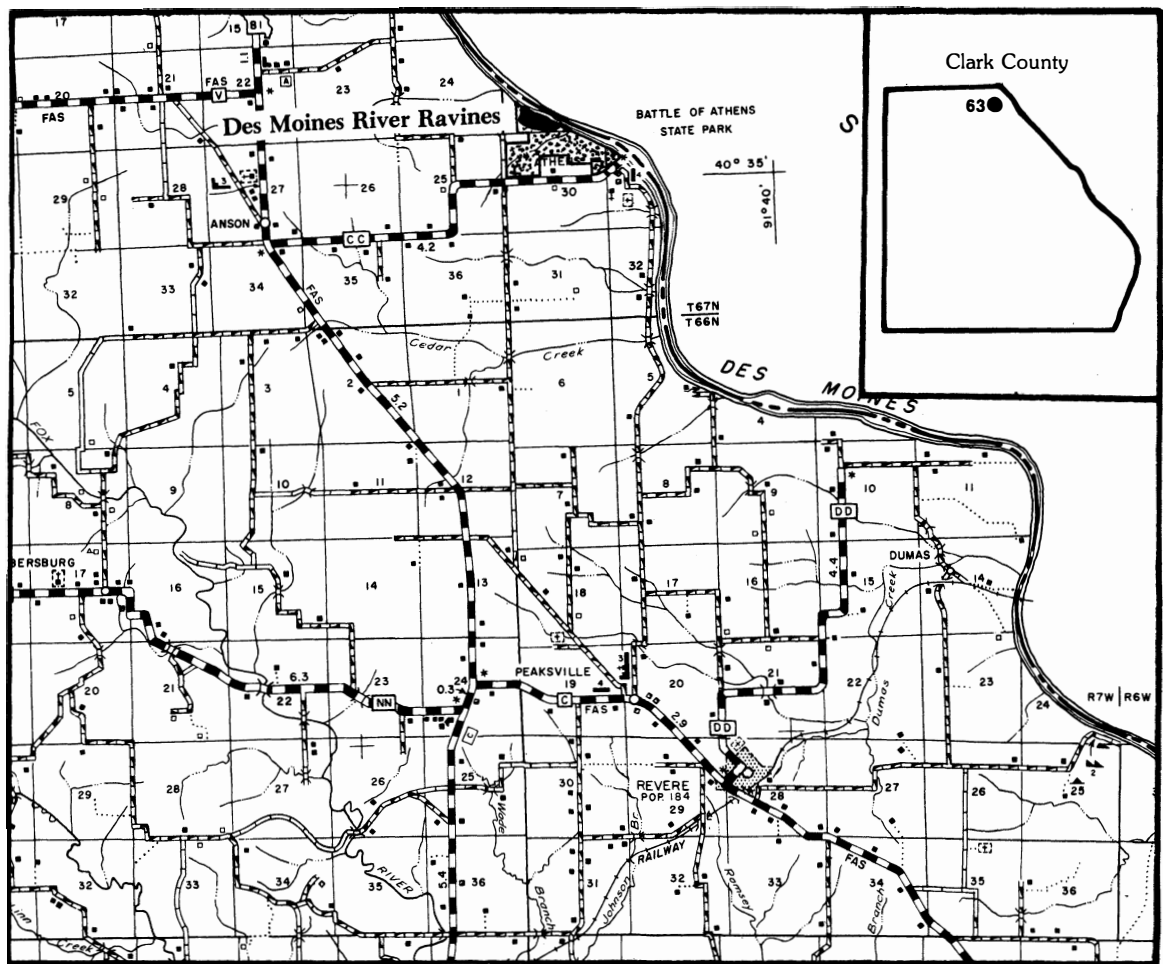
Natural Features—Big Spring is in the lower Ozark Section of the Ozark Natural Division. It is one of the largest of Missouri springs with an average daily discharge of 276,000,000 gallons. In addition to the spring branch, the

area also harbors two caves, a moist dolomite bluff and an extensive limestone talus breakdown slope. Management of this area is by the National Park Service, Ozark National Scenic Riverways. Big Spring Natural Area is registered with the Department of Natural Resources. For further information contact the Superintendent, National Park Service, P.O. Box 490, Van Buren, Missouri 63965, phone 314/323-4236.



Ozark sculpin

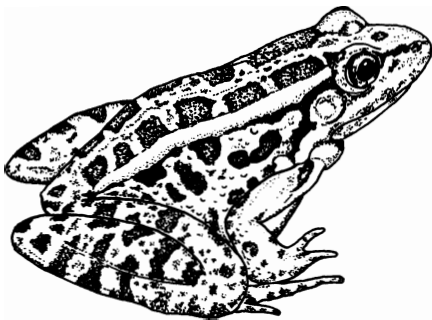
WILLIAM PFLIEGER



Des Moines River Ravines Natural Area

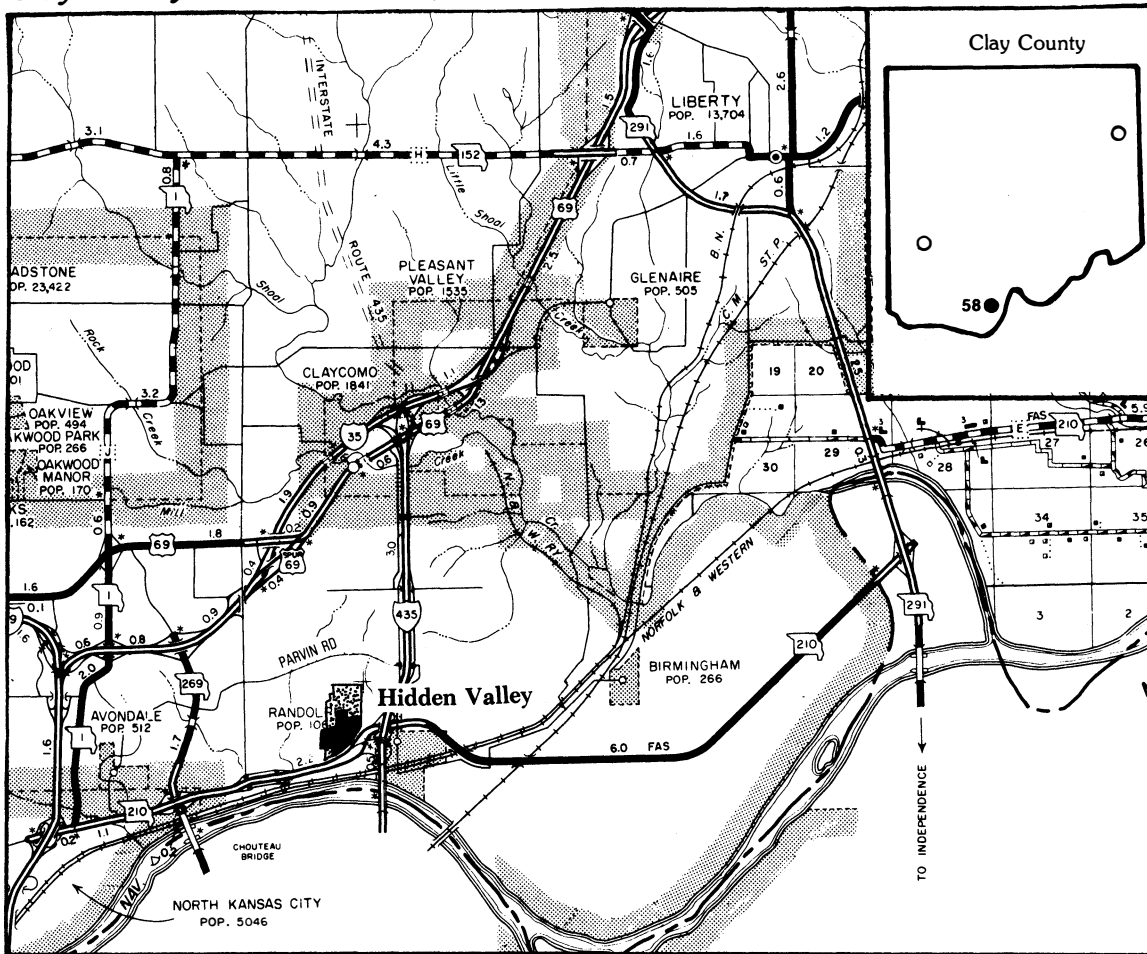
A 40-acre area within Battle of Athens State Park in E $\frac{1}{2}$ SW $\frac{1}{4}$ and W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 19, T67N, R7W, Croton 7.5 min. topographic map. Designated September 25, 1978.

Natural Features—Cove ravines along steep, north-facing slopes overlooking the Des Moines River within the Eastern Section of the Glaciated Plains Natural Division. These steep slopes support an unusually rich flora including many ferns, snow trillium (*Trillium nivale*), white baneberry (*Actaea pachypoda*), spikenard (*Aralia racemosa*) and blue cohosh (*Caulophyllum thalictroides*). The Department of Natural Resources owns the area. For further information contact the Park Superintendent, Battle of Athens State Park, Revere, Missouri 63465, phone 816/877-3871.



Pickerel frog

TOM R. JOHNSON



Hidden Valley Natural Area

An 82-acre area located within Hidden Valley Park in the W $\frac{1}{2}$ Sec. 9, T50N, R32W, North Kansas City 7.5 min. topographic map. Access is from Parvin Road to Hidden Valley Park. Designated April 17, 1978.

Natural Features—Upland forest on deep loess soils (Knox silt loam) and rugged hills in the Western Section of the Glaciated Plains Natural Division. Common overstory trees include northern red, white, and chinquapin oak, shagbark hickory, sugar maple, basswood and hackberry. A

small stream runs through the area. An overlook platform was recently constructed in the interior of this natural area to give the visitor a panoramic vantage point for viewing the unique topography of the area. Hidden Valley Natural Area is owned and managed by the Kansas City Parks and Recreation Department. It is registered with the Department of Conservation. For further information contact Kansas City Parks and Recreation Department, 5600 East Gregory, Kansas City, Missouri 64132, 816/444-4363.

Maple Woods Natural Area

An 18-acre portion of the Maple Woods Nature Preserve in Gladstone. Access is from a parking lot on 76th Street. Part of the SW $\frac{1}{4}$, Sec. 18, T51N, R32W, North Kansas City 7.5 min. topographic map. Designated October 5, 1978.

Natural Features—An old growth upland forest with many wildflowers and beautiful fall colors in the Western Section of the Glaciated Plains Natural Division. Sugar

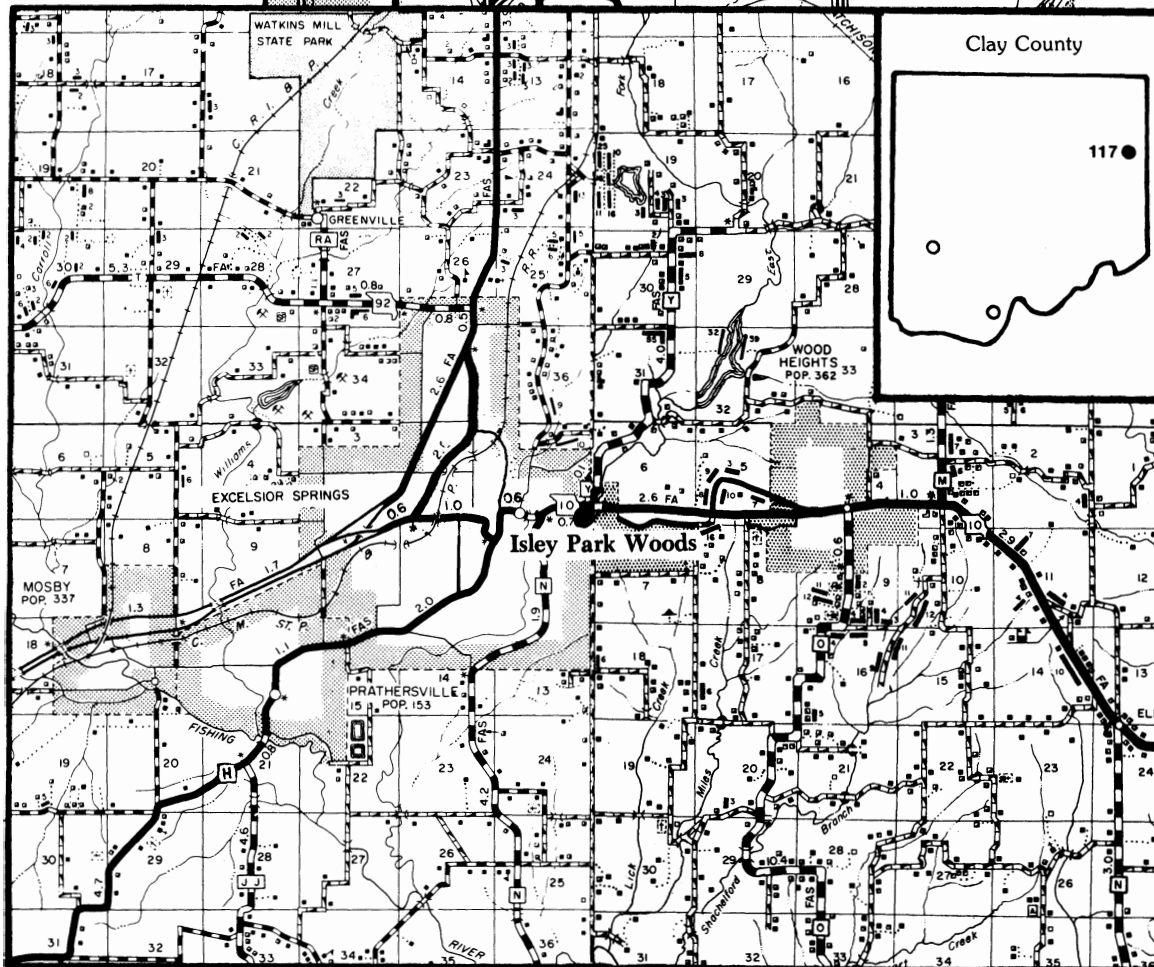
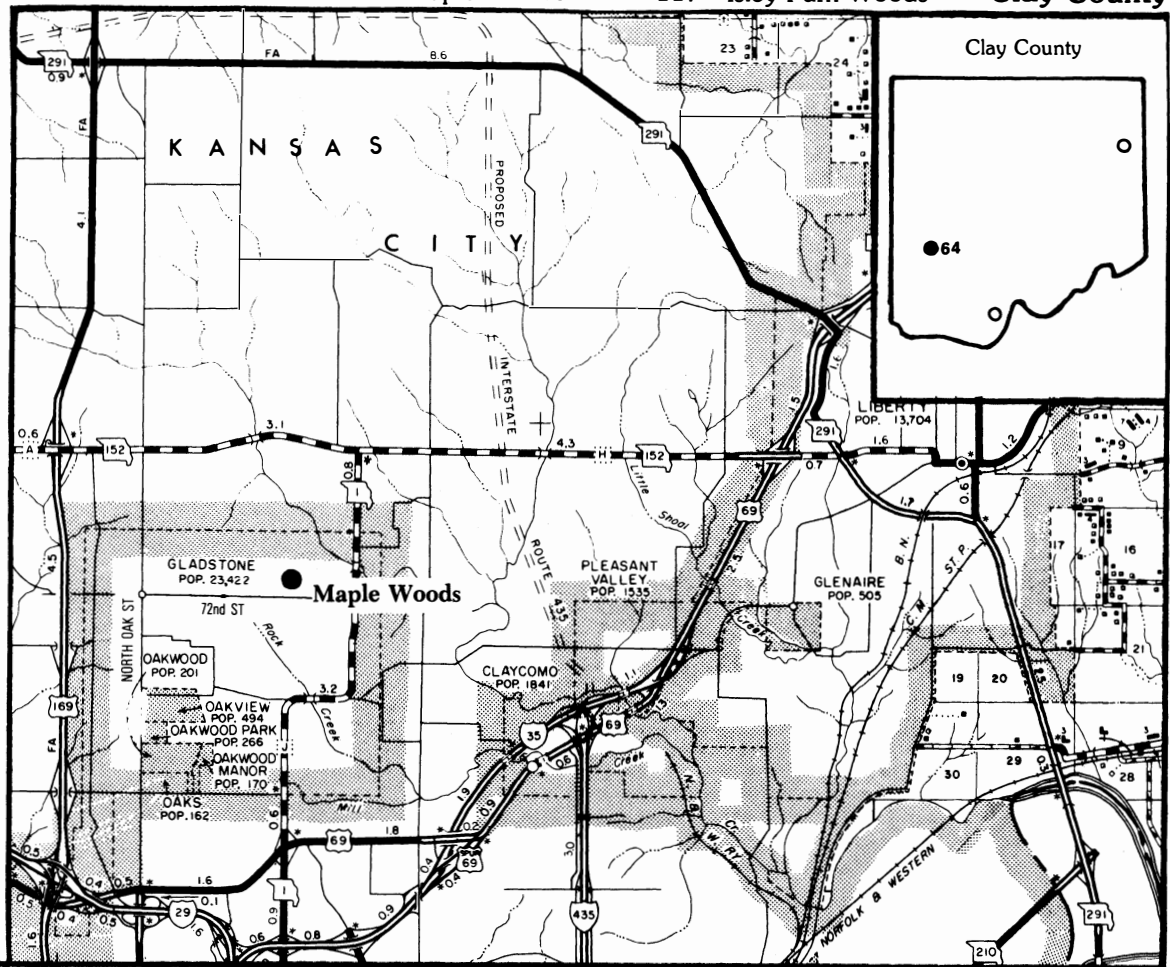
maple, red oak, white oak and basswood are the dominant trees. Maple Woods Natural Area is owned by the Conservation Department and leased to the City of Gladstone for management and use as a nature preserve. For further information contact the City of Gladstone Recreation Department, P.O. Box 10719, 7010 N. Holmes, Gladstone, Missouri 64118, phone 816/436-2200.

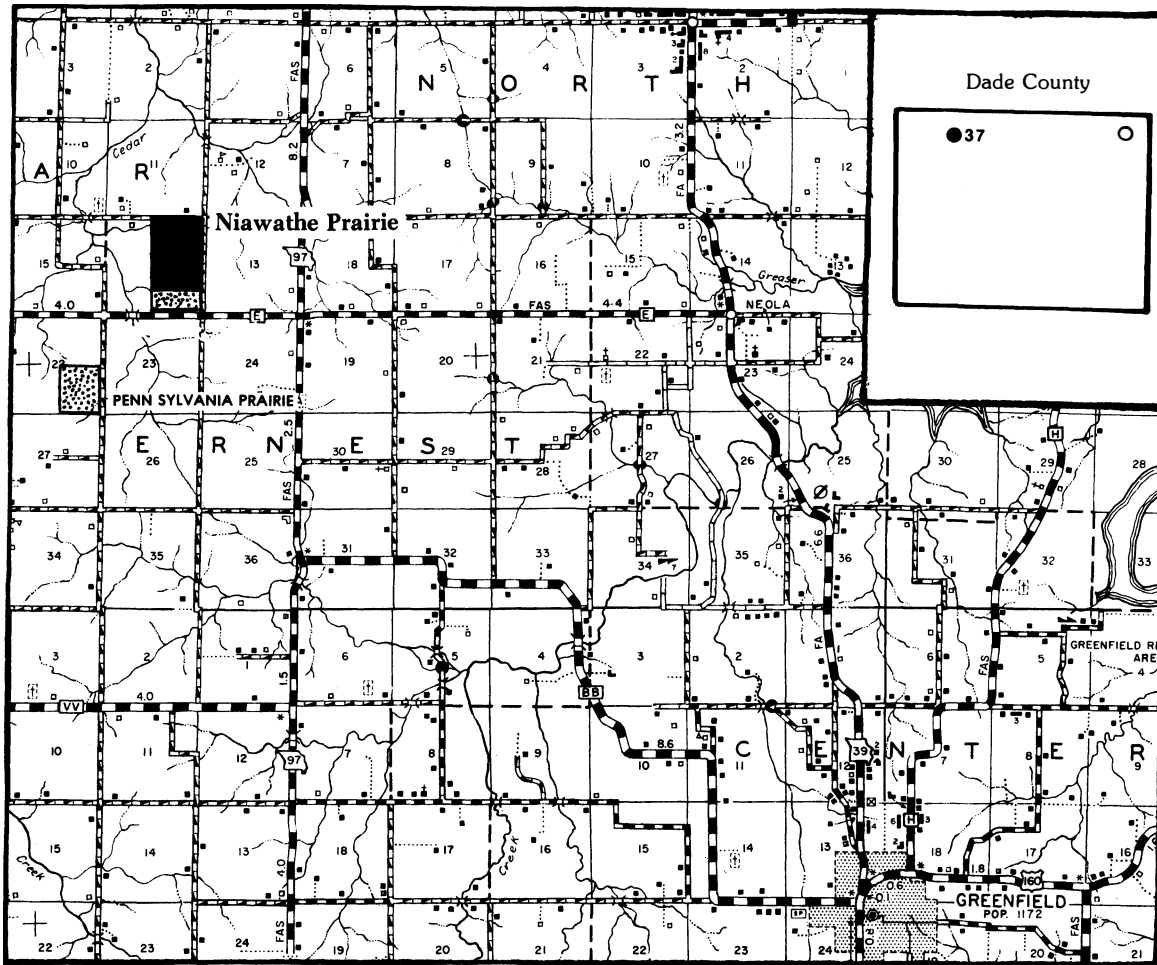
Isley Park Woods Natural Area

A 15-acre area located within Isley Park in Excelsior Springs. Excelsior Springs 7.5 min. topographic map. Designated June 20, 1983.

Natural Features—An old growth upland forest on a steep, north-facing hillside in the Western Section of the Glaciated Plains Natural Division. Northern red, white, bur and chinquapin oak, as well as walnut, basswood and sugar

maple are all common in these rich woods. Spring wildflowers are abundant, and migrating warblers and other birds use the area. The area is owned and managed by the City of Excelsior Springs. For further information contact the Director of Parks and Recreation, Community Center, 112 Thompson Avenue, Excelsior Springs, Missouri 64024, phone 816/637-6051.

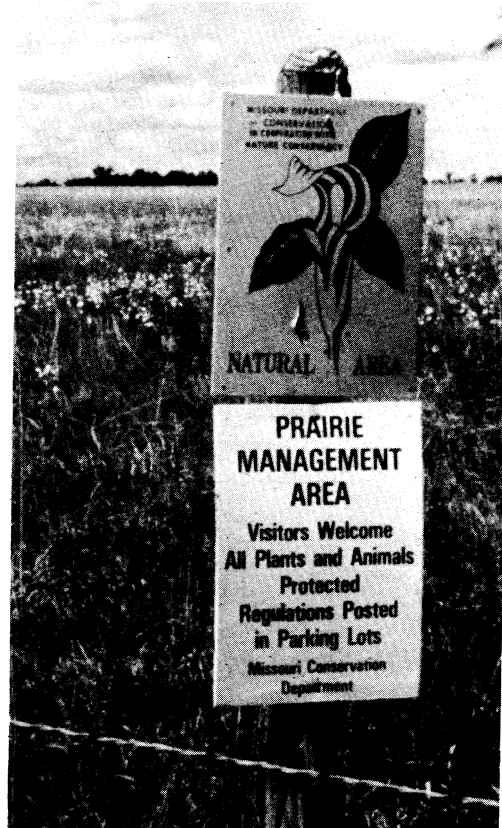




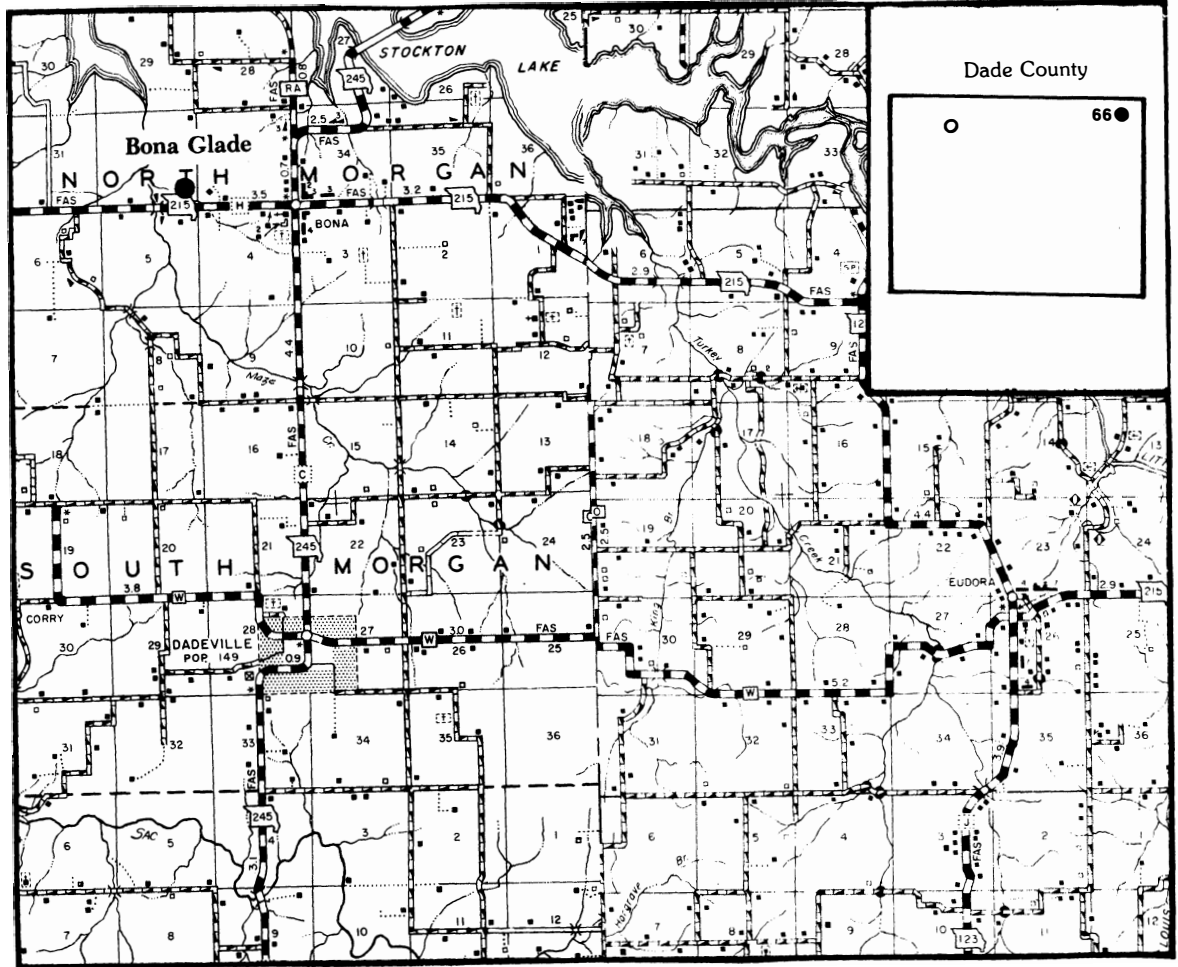
Niawathe Prairie Natural Area

A 240-acre area located eight miles north of Lockwood on Hwy 97; one mile west off Hwy E. The NE $\frac{1}{4}$ and N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 14, T32N, R28W, Cedarville 7.5 min. topographic map. Designated August 26, 1975 (TNC portion) and February 17, 1978 (MDC portion).

Natural Features—Upland tallgrass prairie of the Springfield Plateau Section of the Ozarks Natural Division. This level to hilly prairie occurs on soils of the Parsons, Barco, Barden, Collinsville and Keeno series. Soils vary from deep to shallow, with sandstone rocks exposed in places. Northern harriers, prairie chickens and Henslow's sparrows nest on the area, and short-eared owls occur during the winter. Interesting plants include fringed poppy mallow (*Callirhoe digitata*), blue false indigo (*Baptisia australis*), royal catchfly (*Silene regia*) and the endangered Mead's milkweed (*Asclepias meadii*). Niawathe is the Osage word for "Life-Giver." Niawathe Prairie is owned by the Department of Conservation (160 acres) and The Nature Conservancy (80 acres), and is managed by the Department of Conservation. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



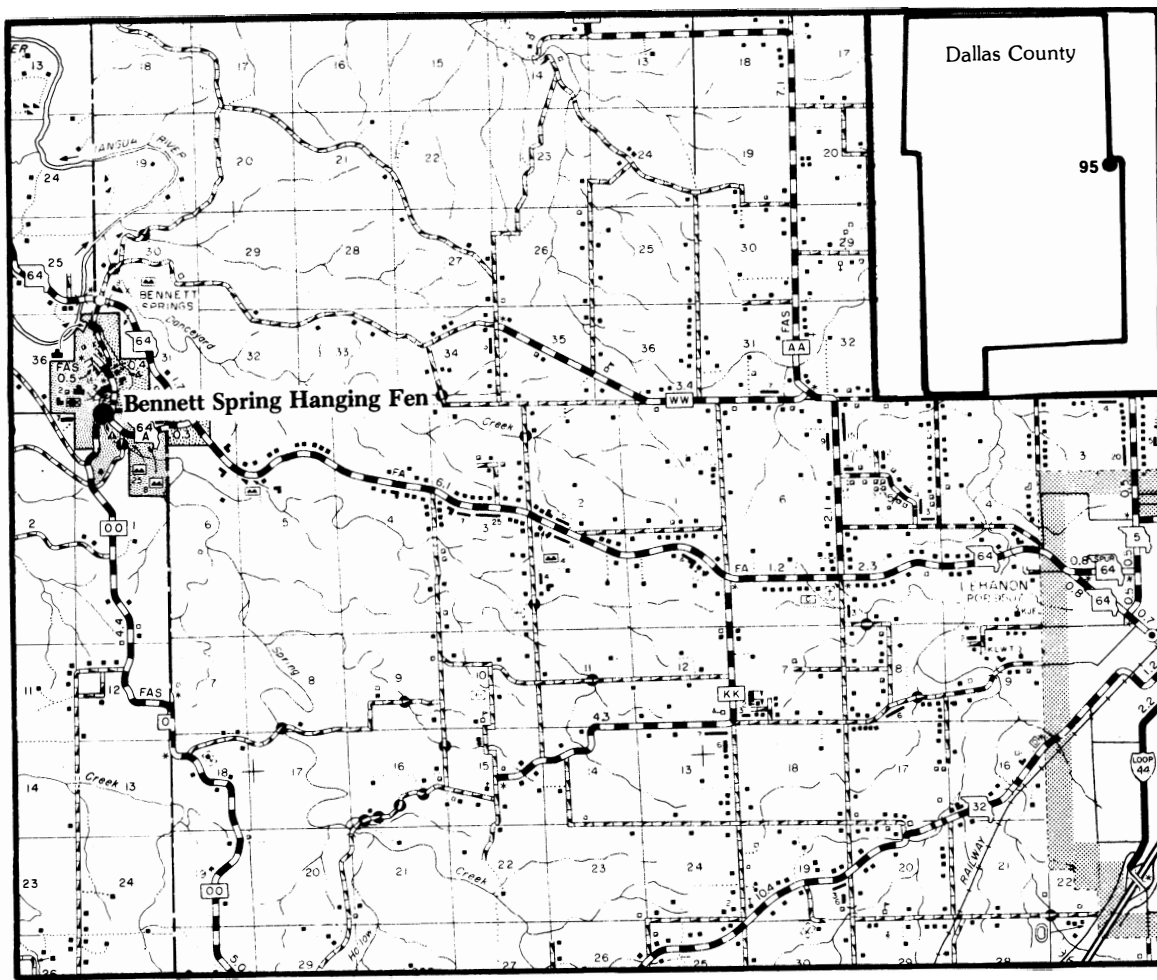
GARY REESE



Bona Glade Natural Area

A 20-acre portion of the Stockton Lake Project one mile west of Bona on Hwy 215 in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 32, T33N, R25W, Bona 7.5 min. topographic map. Designated February 2, 1979.

Natural Features—A sandstone glade in the Springfield Plateau Section of the Ozark Natural Division with characteristic plants and animals and a population of the state-endangered plant *Geocarpon minimum*. Bona Glade is owned and managed by the Kansas City District, U.S. Army Corp of Engineers. It is registered with the Department of Conservation. For further information contact Project Manager, Stockton Lake Project, U.S. Army Corps of Engineers, Stockton, Missouri 65785.



Bennett Spring Hanging Fen Natural Area

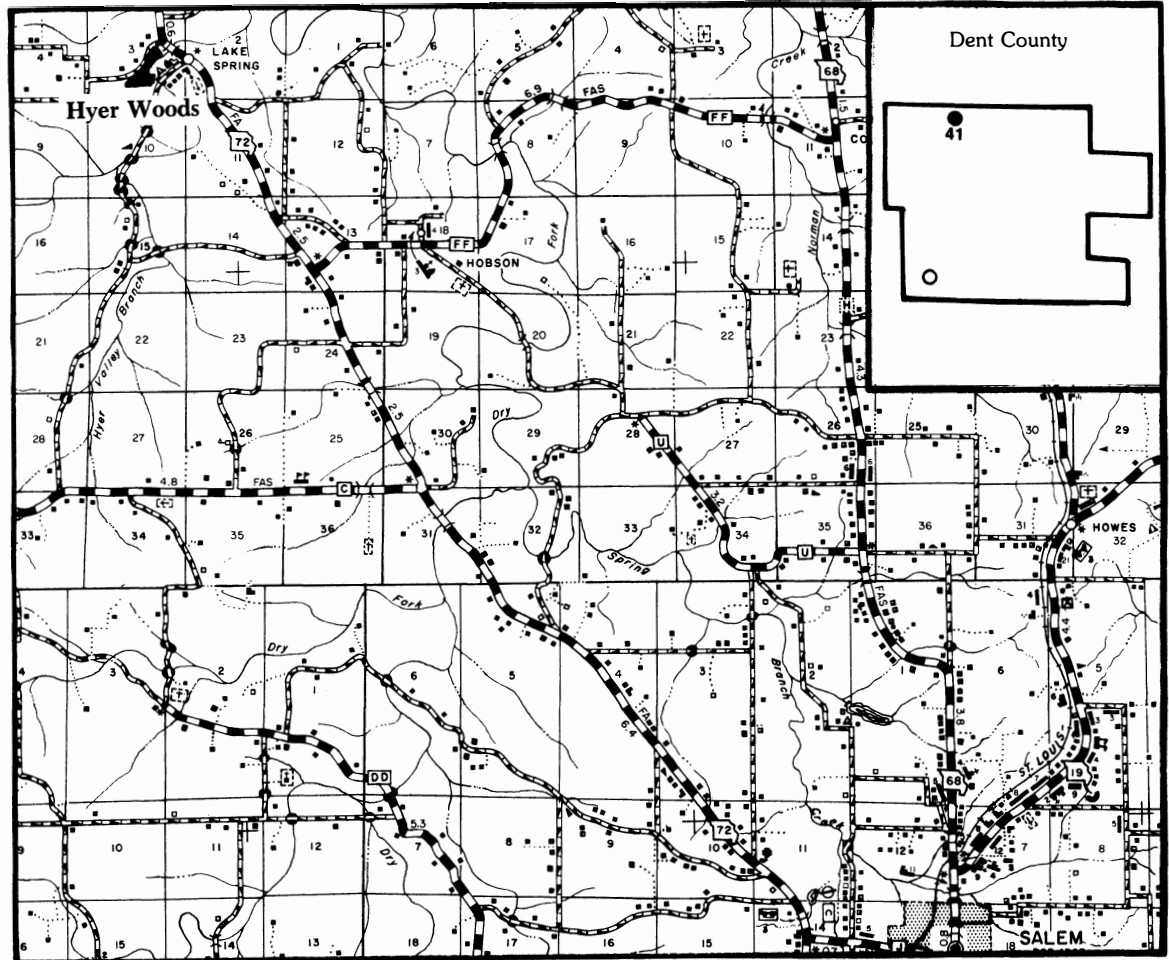
A five-acre area within Bennett Spring State Park. Sec. 1, T34N, R18W, and Sec. 31, T35N, R17W, Bennett Spring 7.5 min. topographic map. Designated March 18, 1982.

Natural Features—Calcareous seep community in the Upper Ozark Section of the Ozark Natural Division developed on a steep slope along the bluff above Bennett Spring Branch. The fen is permanently saturated by cool, mineralized ground water. Many unusual fen plants thrive in the rich, wet, peaty soils: swamp dogwood (*Cornus obliqua*), boneset (*Eupatorium perfoliatum*), umbrella grass (*Fuirena simplex*), cowbane (*Oxypolis rigidior*) and swamp loosestrife (*Lysimachia quadriflora*). State park visitors wishing to visit this area should obtain information from the park naturalist beforehand due to the sensitive nature of the area. The tract is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Bennett Spring State Park, Brice Route, Lebanon, Missouri 65536, phone 417/532-4338.



Louisiana waterthrush

JDWILSON
JAMES D. WILSON



Hyer Woods Natural Area

A 30-acre area located just off U.S. Hwy 72 northwest of Lake Spring in the SE $\frac{1}{4}$ Sec. 3, T35N, R7W, Lecom 7.5 min. topographic map. Designated December 15, 1975.

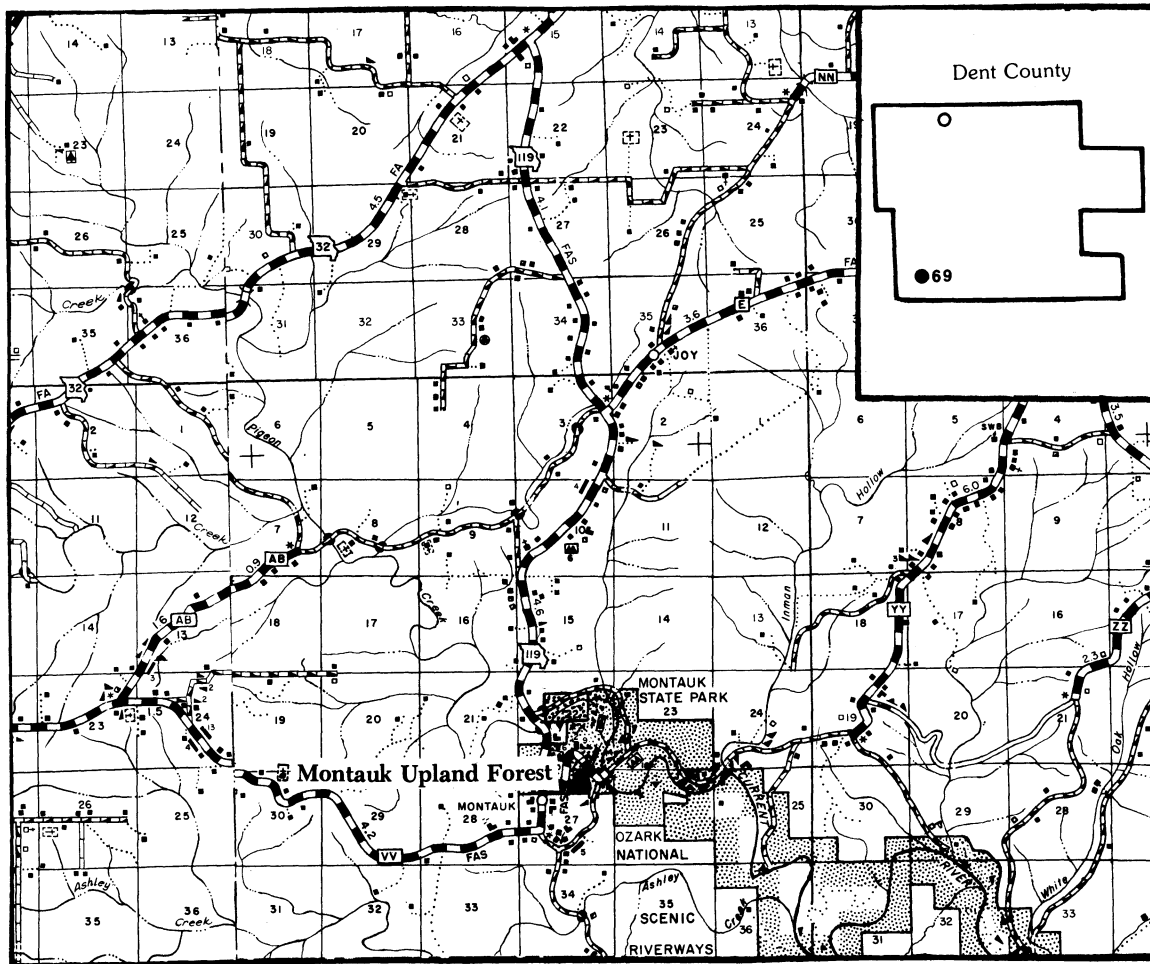
Natural Features—An old growth, upland oak-hickory forest and a small spring and stream (Hyer Branch) in the Upper Ozark Section of the Ozark Natural Division. Hyer Woods is owned by The Nature Conservancy and is managed by the Department of Conservation. For further information contact the District Forester, Gasconade Forest District, Box 509, Rolla, Missouri 65401, phone 314/364-4221.



J. WILSON

Pileated woodpecker

JAMES D. WILSON



Montauk Upland Forest Natural Area

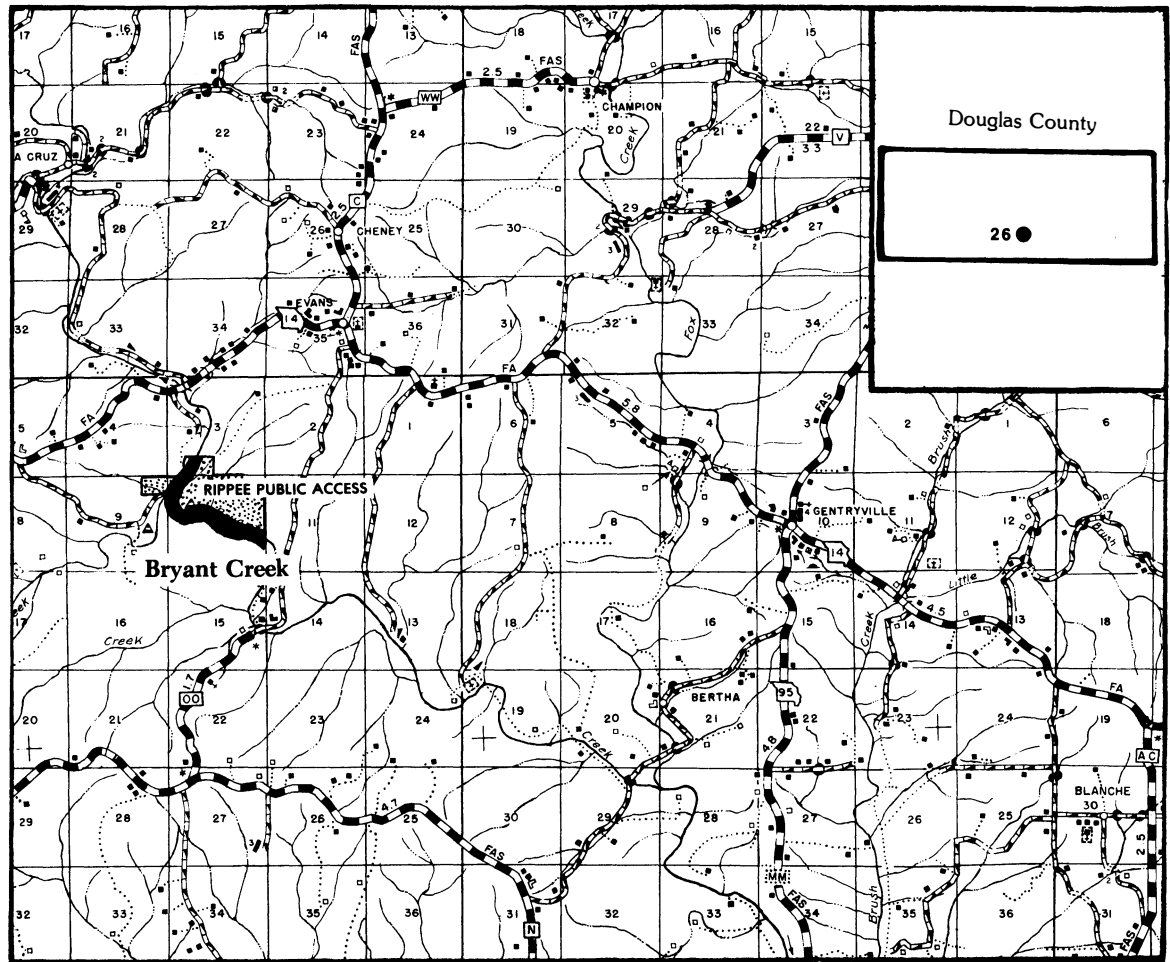
A 40-acre area within Montauk State Park, NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 27, T32N, R7W, Montauk 7.5 min topographic map. Designated June 4, 1979.

Natural Features—Dry upland oak-pine forest; steep, dry to dry-mesic ravines; and a steep bluff exposure which is capped with a mature shortleaf pine forest. The well-developed understory consists of flowering dogwood, redbud, red maple, rusty blackhaw and hawthorn. The natural area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Montauk State Park, Rural Route 5, Salem, Missouri 65560, phone 314/548-2525.



GARY REESE

One-flowered cancer root (Orobanche uniflora)

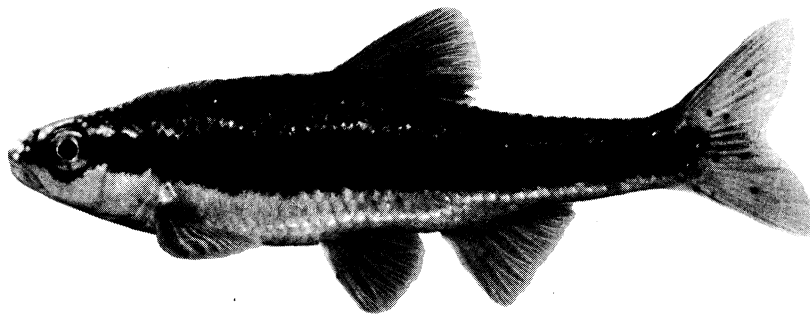


Bryant Creek Natural Area

About 18 acres (1½ miles of creek and buffer zone) of the Rippee Wildlife Area located approximately ten miles southeast of Ava in Sec. 3 and 10, T25N, R14W, Rock-bridge 7.5 min. topographic map. Designated December 18, 1973.

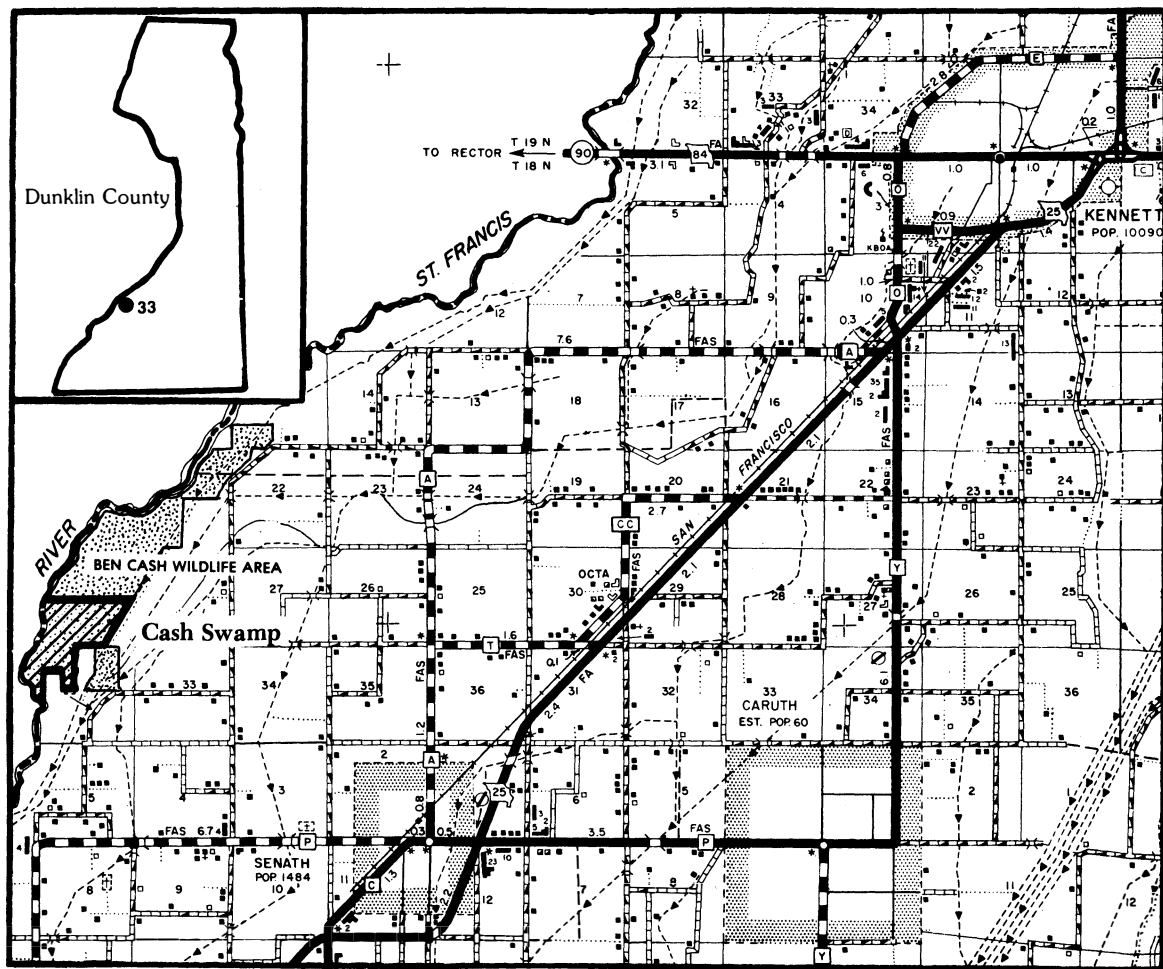
Natural Features—This aquatic area is a high-quality headwater stream with typical aquatic fauna and flora of the

White River Section of the Ozark Natural Division. Bryant Creek Natural Area is owned by the Department of Conservation. For further information contact the District Fisheries Management Biologist, Missouri Department of Conservation, P.O. Box 138, West Plains, Missouri 65775, phone 417/256-7161.



Duskystripe shiner (Notropis pilsbryi)

WILLIAM PFUEGER



Cash Swamp Natural Area

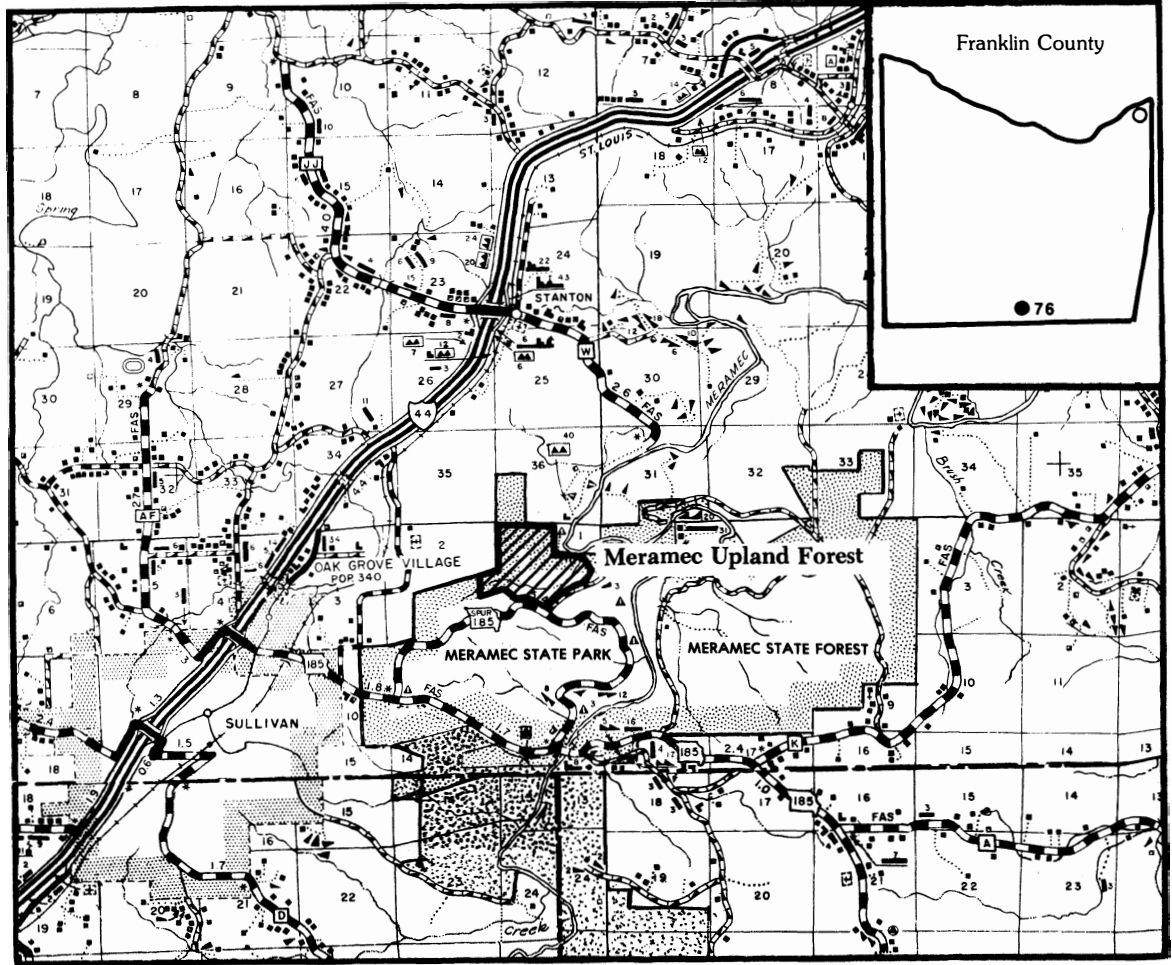
A 310-acre portion of the Ben Cash Memorial Wildlife Area northwest of Senath off Hwy A in Sec. 29 and 32, T18N, R8E, Kennett 15 min. topographic map. Access is by boat from the access site in the northeast corner of the area. This area is low and wet. Access is very poor. Designated April 16, 1975.

Natural Features—A high-quality remnant of tupelo-cypress bottomland forest with flora and fauna typical of the Mississippi Lowlands Natural Division. River otter and swamp rabbits occur here. Cash Swamp Natural Area is owned by the Department of Conservation. For further information contact the Wildlife Area Manager, Otter Slough Wildlife Area, Route 3, Box 388B, Dexter, Missouri 63841, phone 314/624-5821.



RICHARD THOM

Swamp forest at Cash Swamp Natural Area



Meramec Upland Forest Natural Area

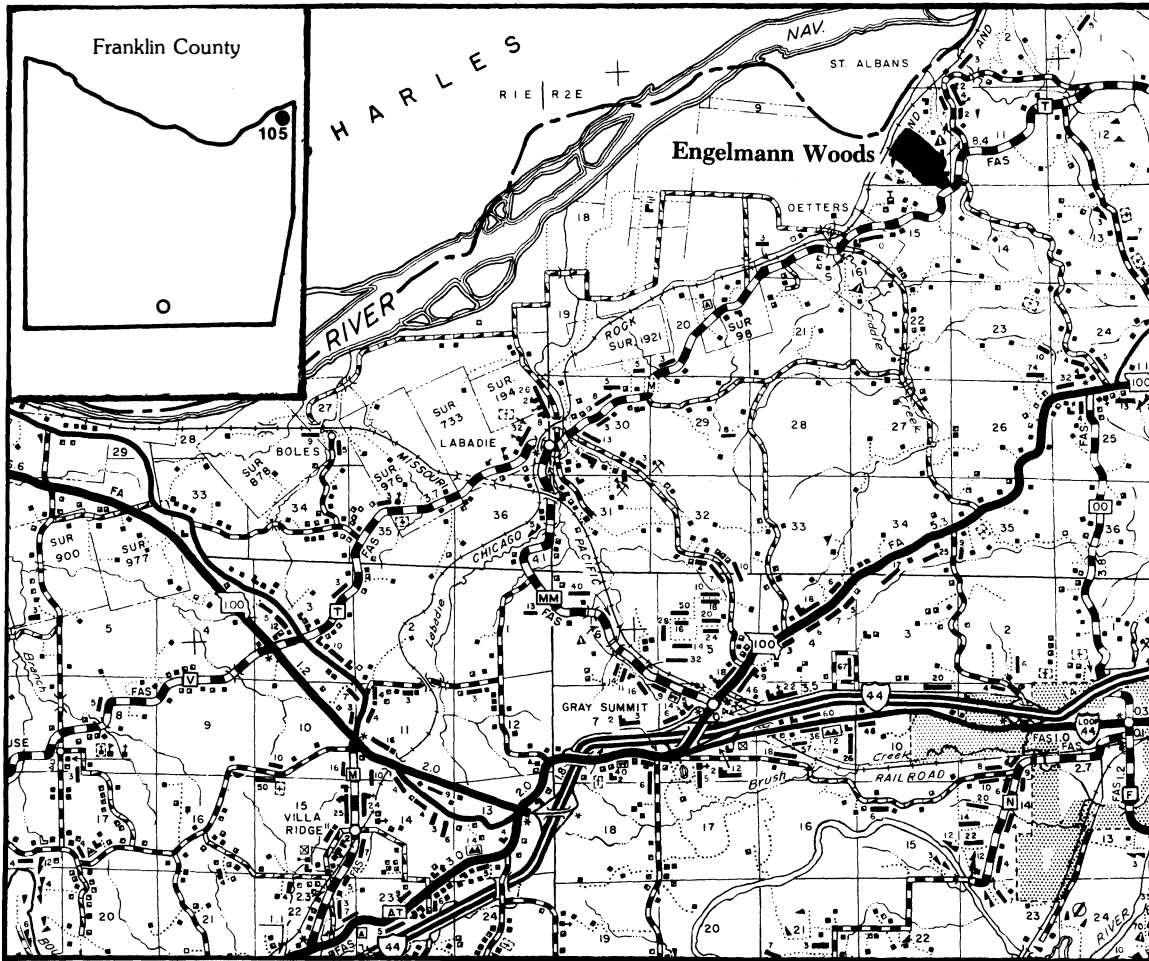
A 461-acre area within Meramec State Park, parts of Sec. 1 and 2, T40N, R2W, Meramec State Park 7.5 min. topographic map. Designated February 28, 1980.

Natural Features—Old growth, dry and dry-mesic chert forest with a well-developed understory and rich ground cover in the Upper Ozark Section of the Ozark Natural Division. Several dolomite glades, calcareous seeps, a sinkhole and caves are also present on the area. More detailed information is provided in the Meramec Trail and Natural Area Guide. The Department of Natural Resources owns this natural area. For further information contact the Park Superintendent, Meramec State Park, Route 4, Box 4, Sullivan, Missouri 63080, phone 314/468-6072.



Barred owl

JAMES D. WILSON



Engelmann Woods Natural Area

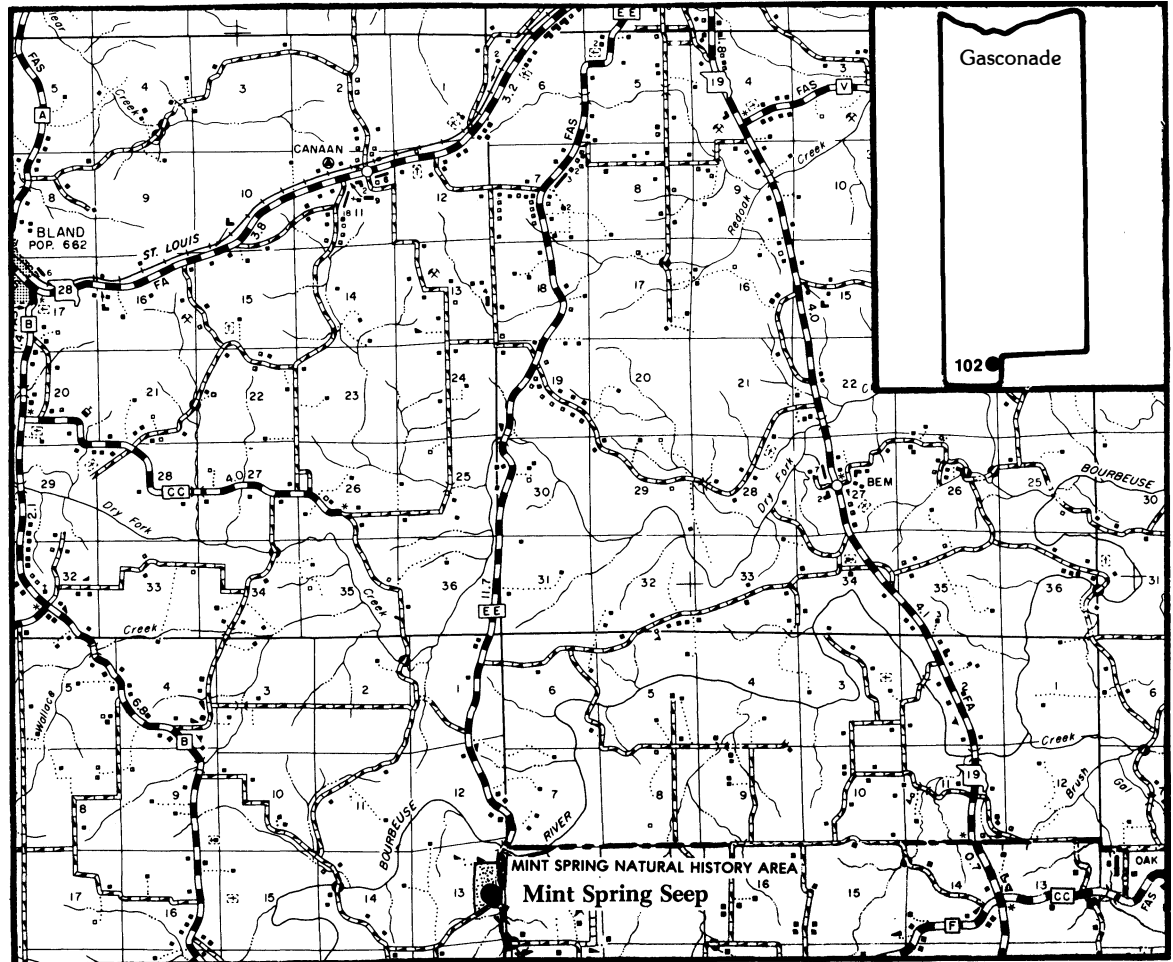
A 145-acre area about five miles northeast of Labadie on Hwy T in the E $\frac{1}{2}$ Sec. 10 and NE $\frac{1}{4}$ Sec. 15, T44N, R2E, Labadie 7.5 min. topographic map. Access is from Hwy T. Designated January 25, 1983.

Natural Features—Mature and old growth forest with red and white oak; basswood, ash and sugar maple; and many spring wildflowers, small creeks and dolomite cliffs. This area is in rugged river hills on soils derived from loess (Winfield and Menfro silt loams) and from weathered dolomite (Gasconade complex) in the Missouri River Section of the Ozark Border Natural Division. There are many ferns and a large population of the showy celandine poppy (*Stylophorum diphyllum*). Spring wildflowers and fall colors create spectacular seasonal displays. Engelmann Woods Natural Area is owned by the Department of Conservation. For further information contact the District Forester, Meramec Forest District, Box 248 (Jct. Bus. I-44 & 185 South), Sullivan, Missouri 63080, phone 314/468-4157 or 314/468-4158.



Gray squirrel

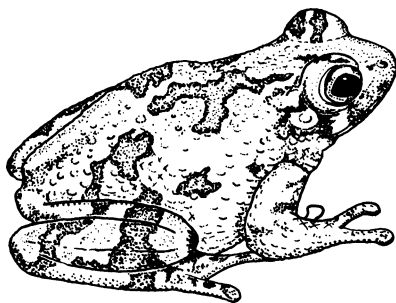
CHARLES W. SCHWARTZ



Mint Spring Seep Natural Area

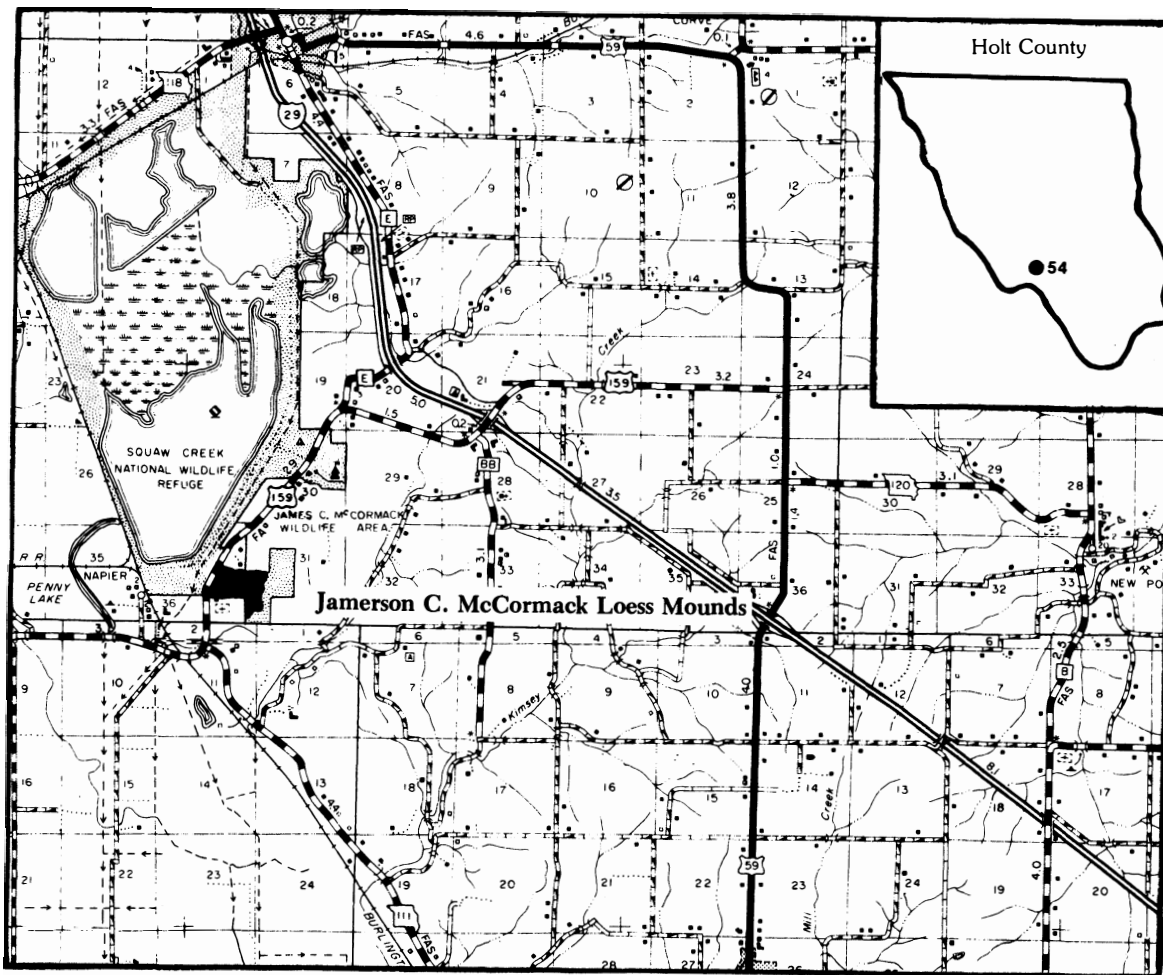
A five-acre area located ten miles south of Owensville on State Hwy EE, then west on a county gravel road. Part of the E $\frac{1}{2}$ Sec. 13, T40N, R6W, Redbird 7.5 min. topographic map. Designated August 27, 1982.

Natural Features—A spring seep and seep forest, a small stream, and outcrops of Roubidoux sandstone in the Upper Ozark Section of the Ozark Natural Division. The seep springs keep the soil continually wet in about a half acre. Sycamore, swamp white oak, river birch, alder and spicebush are woody plants that grow here. Moisture-loving plants include several kinds of mosses and ferns, and the uncommon swamp saxifrage (*Saxifraga pensylvanica* var. *forbesii*). The natural area is part of Mint Spring Natural History Area and is owned by the Department of Conservation. For further information contact the District Forester, Meramec Forest District, Box 248 (Jct. Bus. I-44 & 185 South), Sullivan, Missouri 63080, phone 314/468-4157 or 314/468-4158.



Eastern gray treefrog

TOM R. JOHNSON



Jamerson C. McCormack Loess Mounds Natural Area

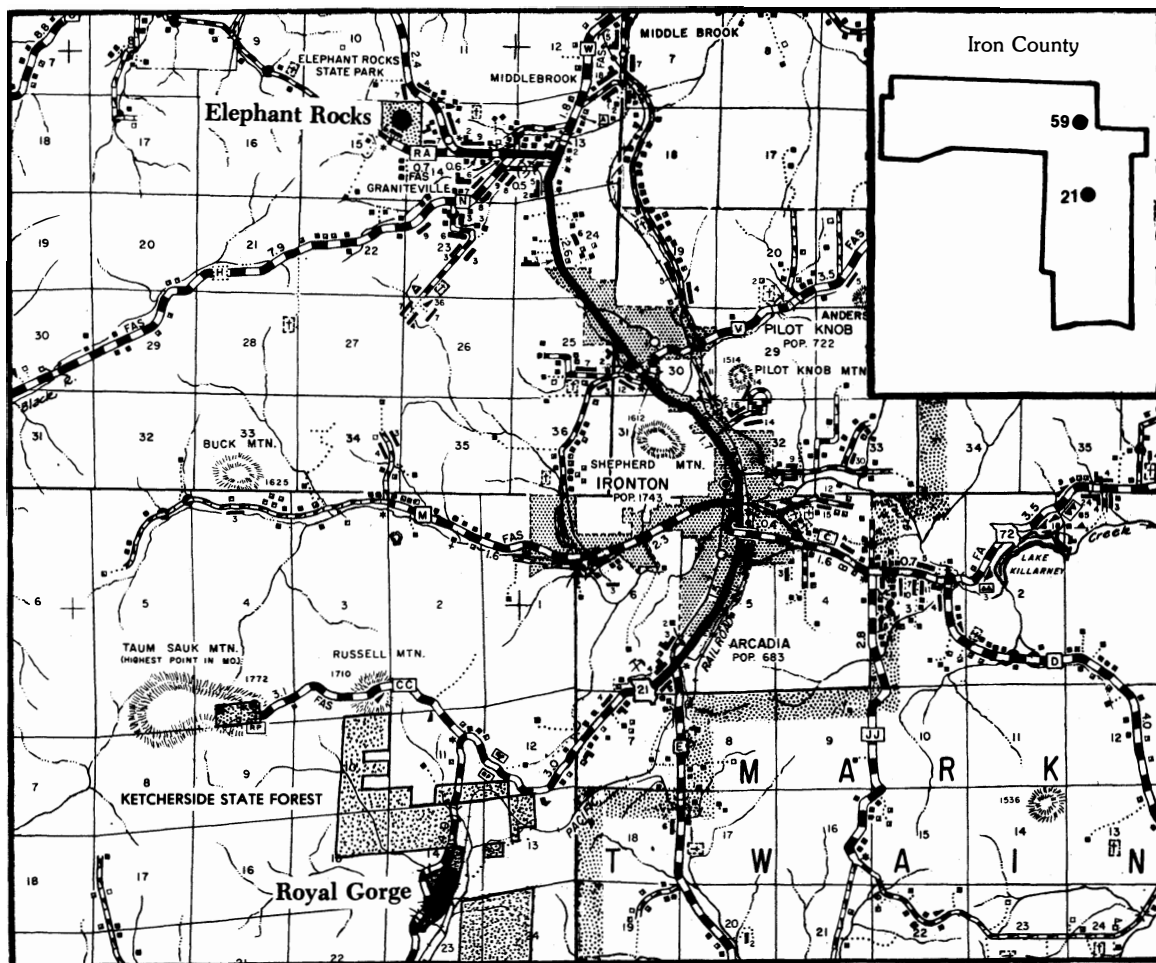
A 112-acre portion of the Jamerson C. McCormack Wildlife Area. It is located near the southern end of Squaw Creek National Wildlife Refuge off U.S. Hwy 159, about five miles south of Mound City in Sec. 31 and 36, T61N, R38W and R39W, Kimsey Creek topographic map. Designated February 17, 1978.

Natural Features—Prairie and forest on rugged loess mounds of the Western Section of the Glaciated Plains Natural Division. The prairie is on deep Napier and Hamburg soils. It harbors plants that are typical of the Great Plains but uncommon in Missouri such as downy painted cup (*Castilleja sessiliflora*) and hairy grama grass (*Bouteloua hirsuta*). The endangered skeleton plant (*Lygodesmia juncea*) and low milk vetch (*Astragalus lotiflorus*) occur here. The natural area is jointly owned by the Department of Conservation (69 acres) and The Nature Conservancy (43 acres) and managed by the Department of Conservation. For more information contact the Wildlife District Supervisor, 3408 Ashland, St. Joseph, Missouri 64506, phone 816/233-3212.



PAUL NELSON

Dry prairie at Jamerson C. McCormack Loess Mounds Natural Area



Royal Gorge Natural Area

An 80-acre portion of Ketcherside State Forest located five miles south of Ironton on Hwy 21 in the SE $\frac{1}{4}$ Sec. 14 and NE $\frac{1}{4}$ Sec. 23, T33N, R3E, Ironton 7.5 min. topographic map. Designated March 17, 1973.

Natural Features—Scenic igneous (rhyolite) glades and cliffs, scarlet oak-pine forest, oak-hickory forest and a head-

waters stream in the St. Francois Mountains Section of the Ozark Natural Division. Royal Gorge Natural Area is owned by the Department of Conservation. For further information contact the District Forester, Clearwater Forest District, Route 1, Box 1 (Hwy 34), Piedmont, Missouri 63957, phone 314/223-4525.

Elephant Rocks Natural Area

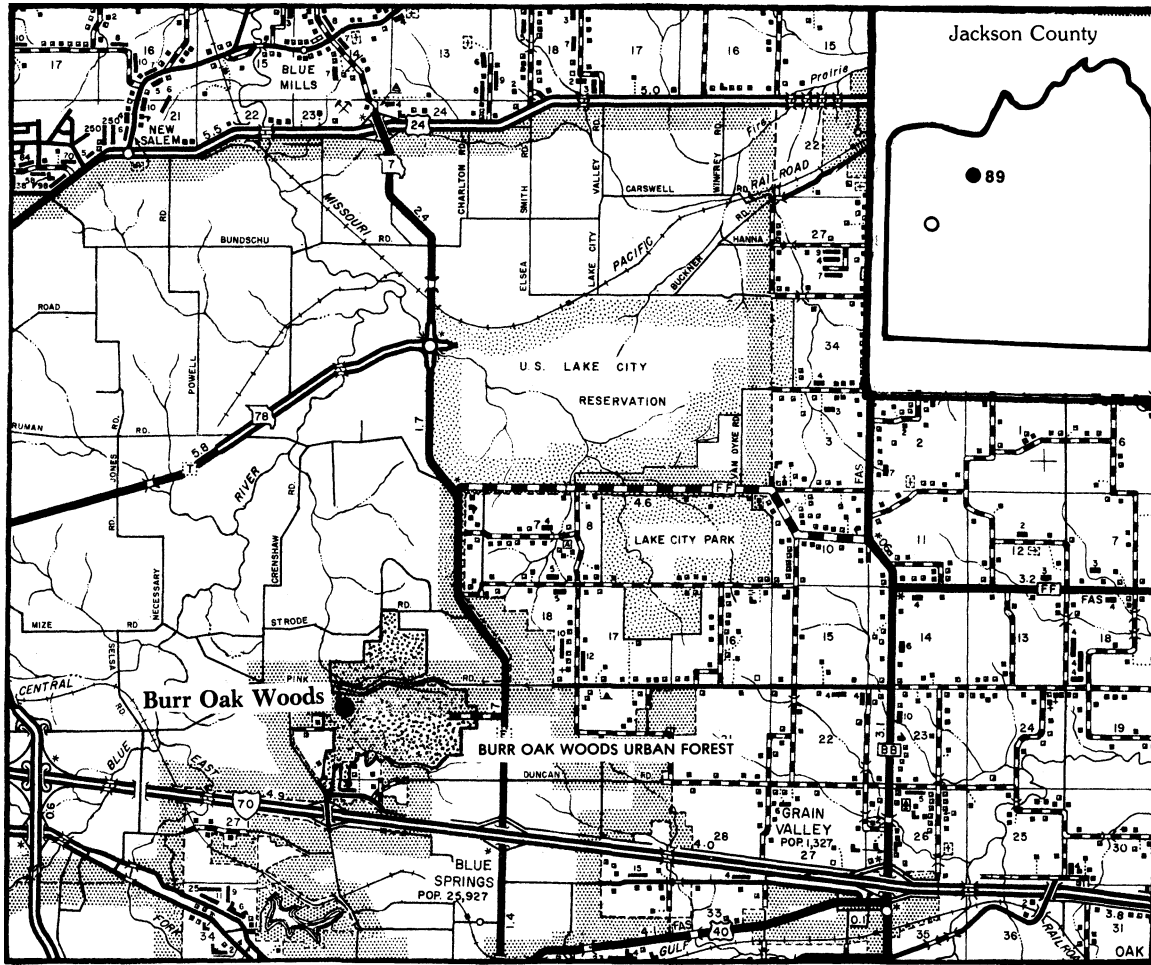
A seven-acre area in Elephant Rocks State Park, Sec. 15, T34N, R3E, Graniteville 7.5 min. topographic map. Designated May 6, 1978.

Natural Features—Elephant Rocks is a geological natural area displaying the best-known examples of massive spheroidal granite boulders, a result of unique weathering processes. Examples of all stages of weathering, from narrow, open joints to large, rounded boulders and blocks may be seen. "Tinajitas" (natural depressions in the rock caused by weathering) are prominent on the bare granite in several sections of the natural area. The area is in the St. Francois Mountain Section of the Ozark Natural Division. The natural area is encircled by a braille trail (a National Recreation Trail) designed especially for the visually and physically handicapped. The area is owned by the Department of Natural Resources. More information on geologic history is available in the state park brochure. For further information contact the Park Superintendent, Elephant Rocks State Park, Star Route 1, Box 191, Bellevue, Missouri 63623, phone 314/697-5395.



Elephant Rocks

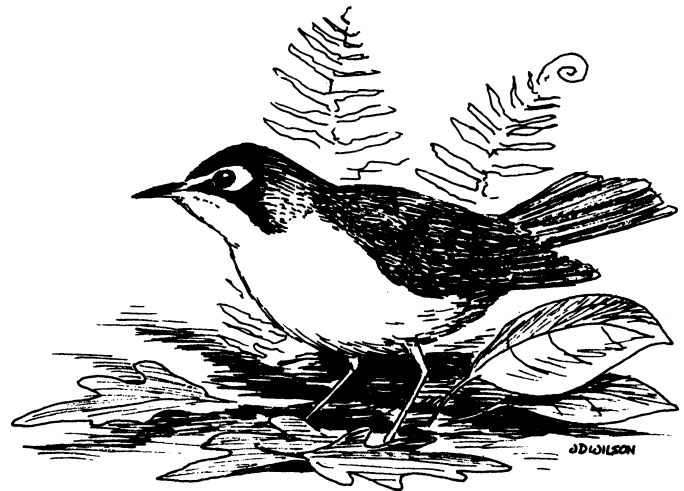
GARY REESE



Burr Oak Woods Natural Area

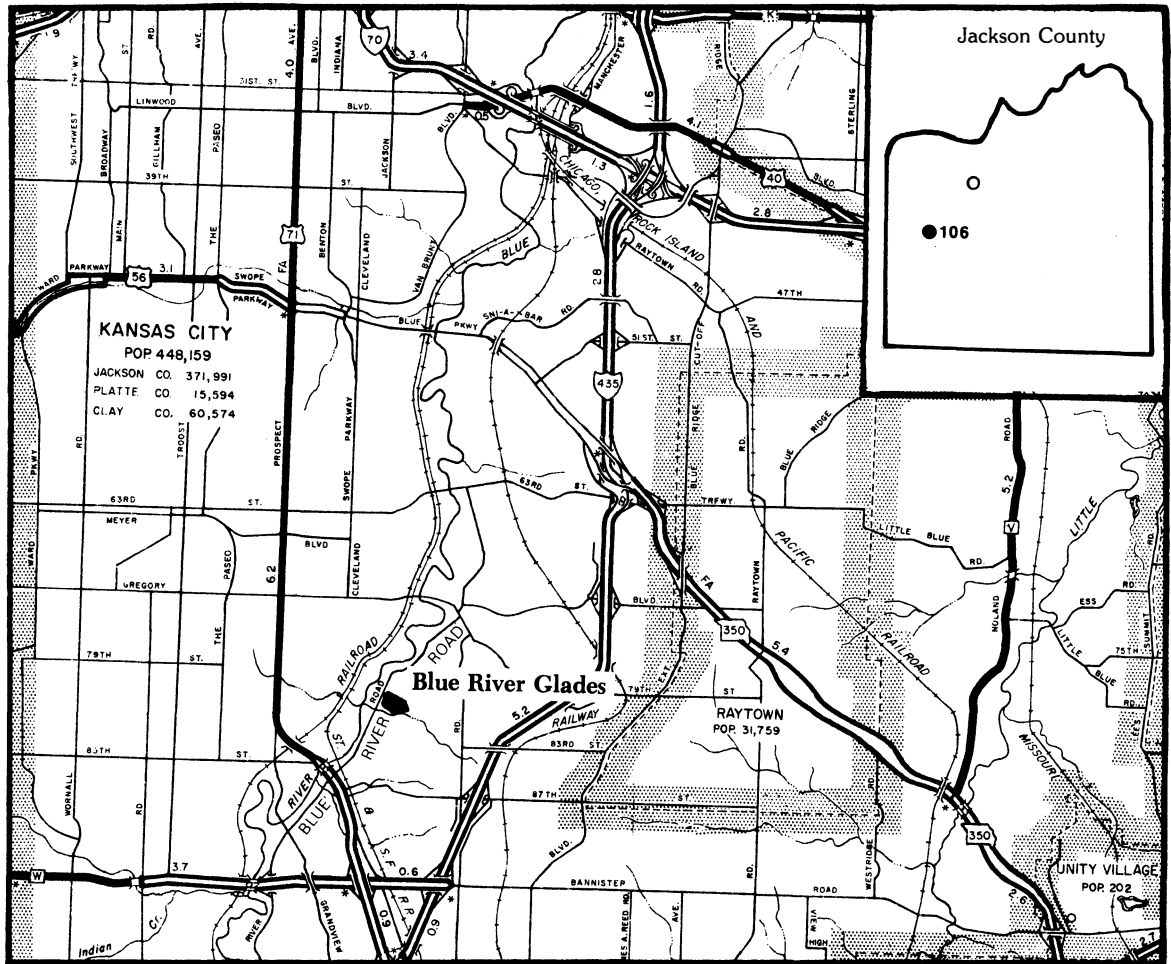
A 33-acre portion of Burr Oak Woods urban forest in Blue Springs about one mile north of I-70 in Sec. 23, T49N, R31W, Blue Springs 7.5 min. topographic map. Access from Hwy 7 and then by foot from the nature center. Designated September 1, 1981.

Natural Features—Mature and old growth upland forest and Bethany Falls limestone exposures in the Western Section of the Glaciated Plains Natural Division. An old chinquapin oak stand dominates the dry, rocky upper slopes. A rich woods with red and white oak, basswood, Kentucky coffee tree and black walnut occupies a lower north-facing slope. An informational brochure is available for this area. The natural area is part of the 1,066-acre Burr Oak Woods urban forest and is owned by the Department of Conservation. Collecting of plants and animals is prohibited. All of Burr Oak Woods urban forest is a wildlife refuge. Additional regulations are posted on the area. For further information contact the District Forester, Kansas City Forest District, P.O. Box 65, Blue Springs, Missouri 64015, phone 816/228-3766.



Kentucky warbler

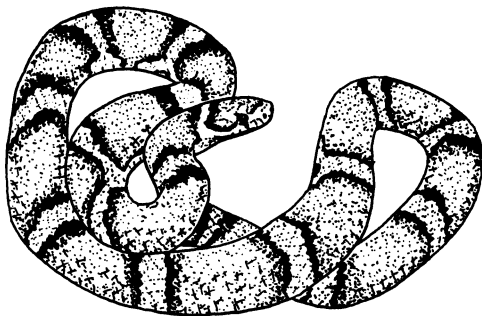
JAMES D. WILSON



Blue River Glades Natural Area

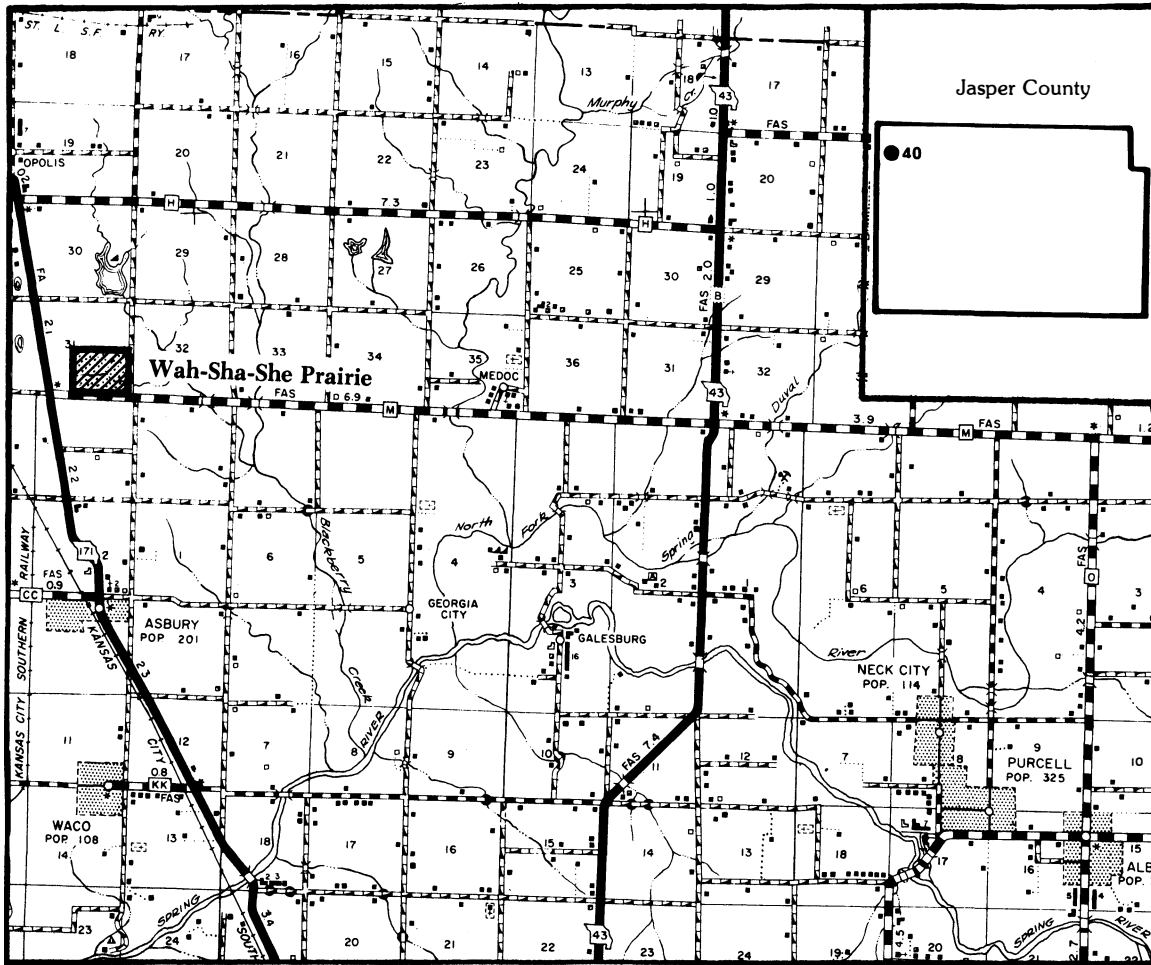
An 18-acre area in Kansas City, southwest of Swope Park in N $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 14, T48N, R33W, Grandview 7.5 min. topographic map. Access is from Blue River Road. Designated January 25, 1983.

Natural Features—Cliffs and small glades with many interesting glade plants on Bethany Falls limestone in the Western Section of the Glaciated Plains Natural Division. Blue River Glades Natural Area is owned and managed by the Jackson County Parks and Recreation Department. It is registered with the Department of Conservation. Camping, fires and collecting of plants and animals are prohibited. For further information contact the Director, Jackson County Parks and Recreation Department, 415 East 12th Street, Kansas City, Missouri 64106, phone 816/795-8200.



Red milk snake

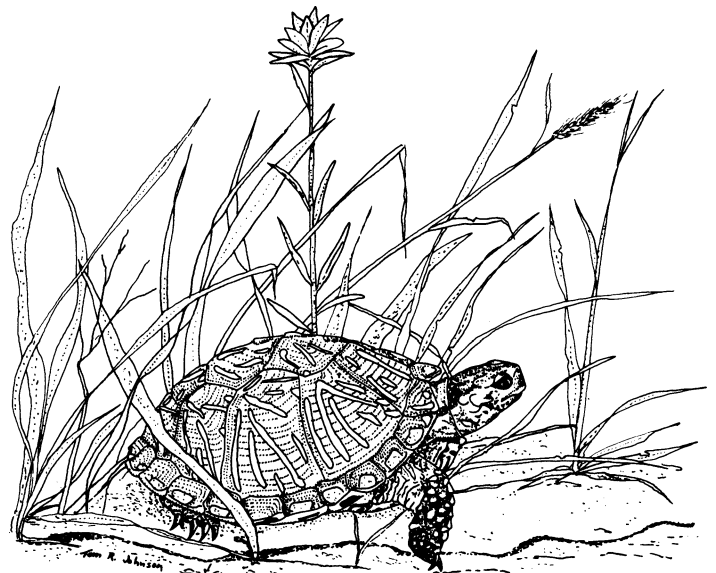
TOM R. JOHNSON



Wah-Sha-She Prairie Natural Area

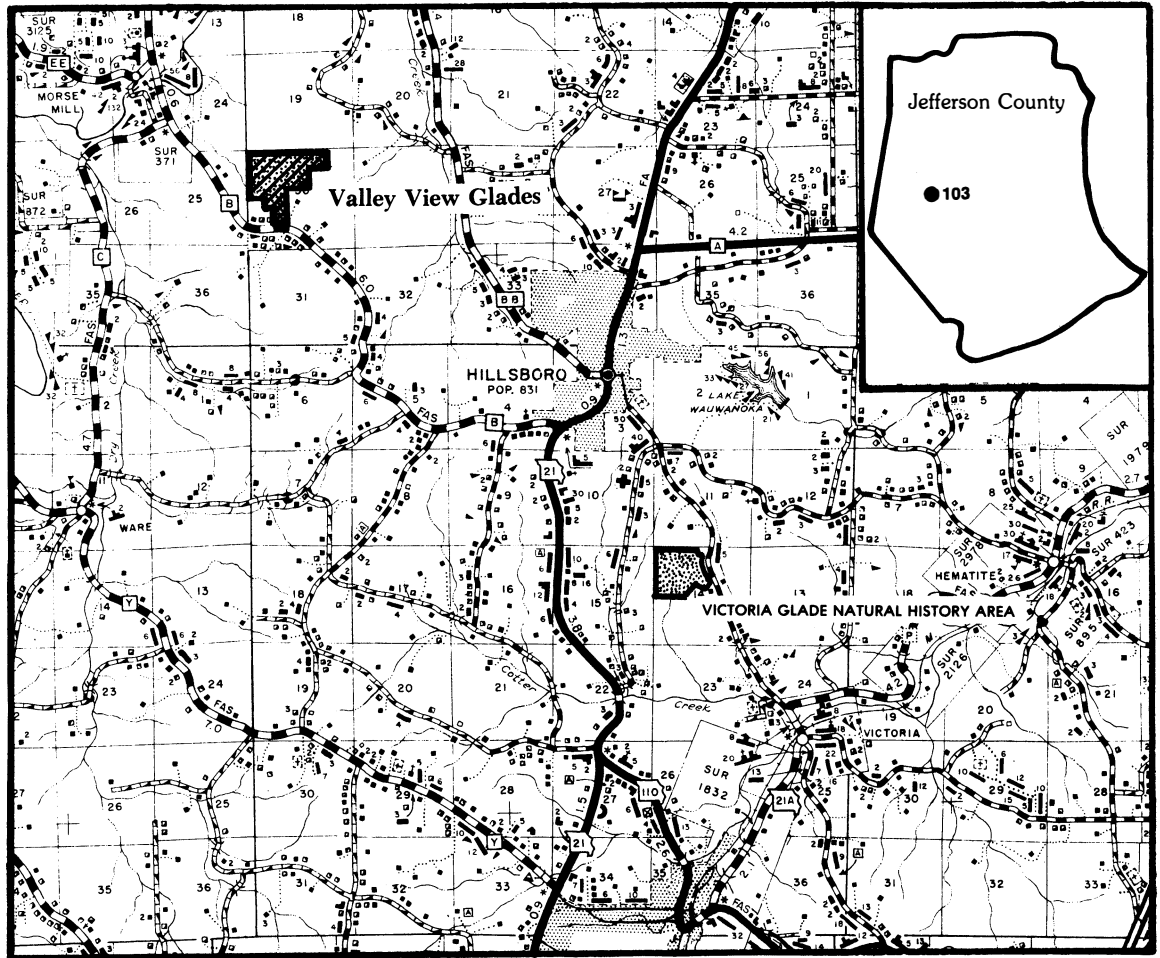
A 160-acre area two miles north of Asbury in the SE $\frac{1}{4}$ Sec. 31, T30N, R33W, Pittsburg 15 min. topographic map. Designated October 22, 1975.

Natural Features—A nearly level upland prairie over claypan soils (Cherokee silt loam) with high plant diversity in the Osage Plains Natural Division. A ten-acre pond and shallow marsh, although not natural features, attract reptiles and amphibians once common to native marshy prairies, as well as migrating shorebirds and waterfowl. This is the only claypan soil prairie on public land in the Osage Plains Natural Division. *Wah-Sha-She* means "Water People," a subdivision of the Osage Indians. Wah-Sha-She Prairie is owned by The Nature Conservancy and is leased to the Department of Conservation. It is a wildlife refuge. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



Ornate box turtle

TOM R. JOHNSON



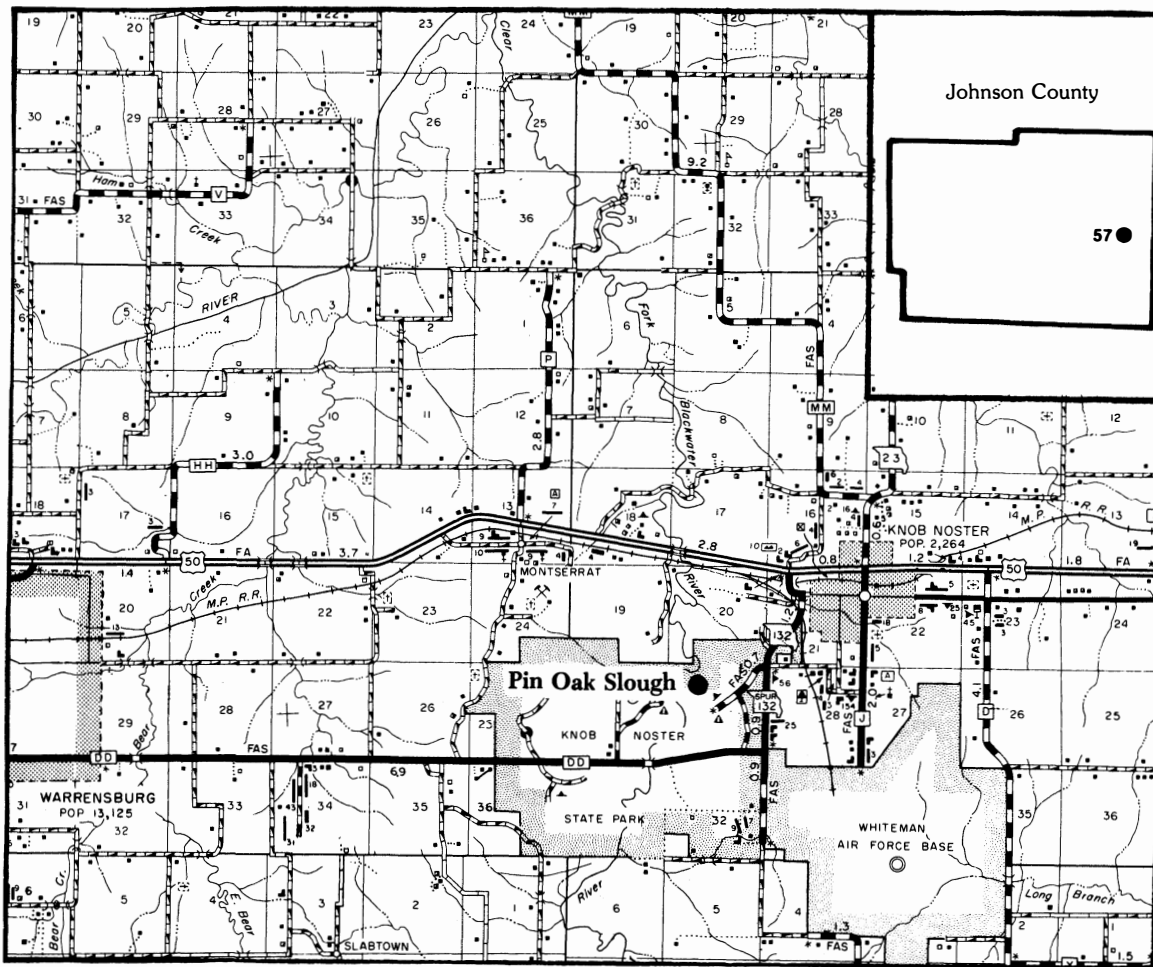
GARY REESE

Valley View Glades Natural Area

A 227-acre area three miles northwest of Hillsboro on Hwy B in Sec. 30, T41N, R4E, Cedar Hill and Belew Creek 7.5 min. topographic maps. Designated August 27, 1982.

Natural Features—Large glade complex in the hills bordering Big River on Jefferson City-Cotter dolomite. Oak-hickory forest and small creeks in the Mississippi River Section of the Ozark Border Natural Division are also features. These scenic glades have a diverse flora and fauna. Fremont's leather flower (*Clematis fremontii*) and Missouri evening primrose (*Oenothera missouriensis*) are two of the interesting glade plants. Little bluestem (*Andropogon scoparius*) and side-oats grama (*Bouteloua curtipendula*) are the dominant glade grasses. Forest occupies the draws between the glades and other areas with deeper soil and moister conditions. An informational brochure is available for this area. This area is owned by the Department of Conservation. For further information contact the District Forester, St. Louis Forest District, Route 1, Box 1599, Glencoe, Missouri 63038, phone 314/458-2236.

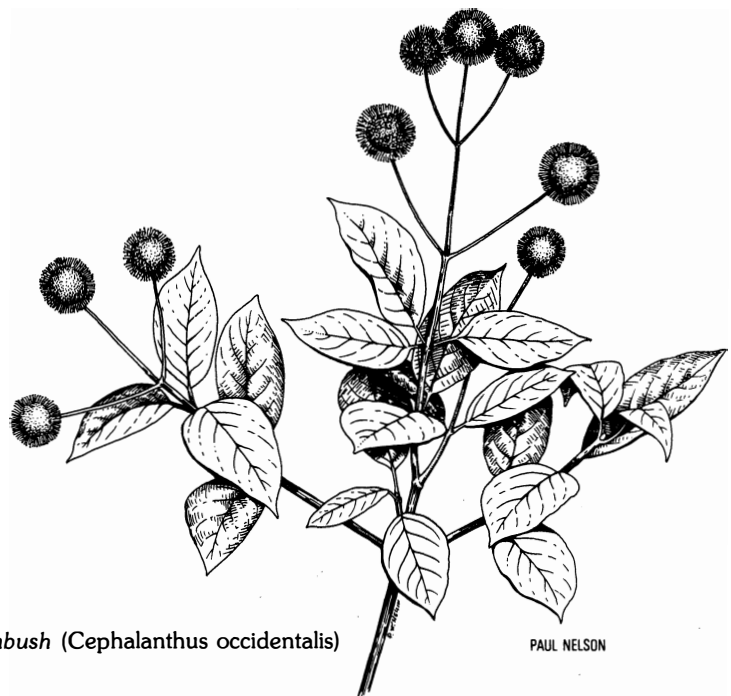
Missouri evening primrose



Pin Oak Slough Natural Area

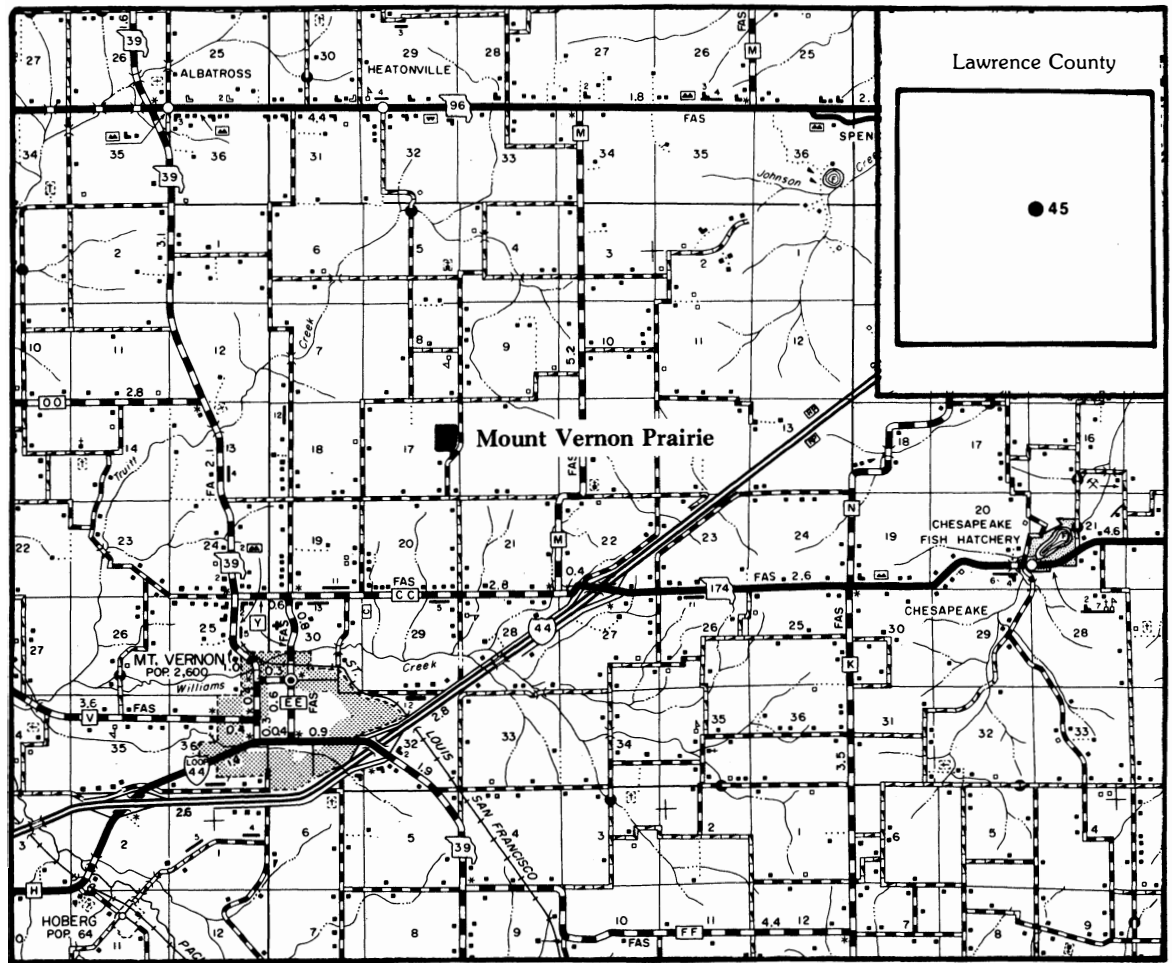
A four-acre portion of Knob Noster State Park in NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29, T46N, R24W, Knob Noster 7.5 min. topographic map. Designated March 30, 1978.

Natural Features—Former oxbow slough of Clearfork Creek featuring mature wet-mesic forest and buttonbush shrub swamp. The depression within the slough causes water to pool during the spring. Dominant trees include silver maple and bur, pin and swamp white oak. Pin Oak Slough is located in the Osage Plains Natural Division. The natural area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Knob Noster State Park, Knob Noster, Missouri 65336, phone 816/563-2463.



Buttonbush (*Cephalanthus occidentalis*)

PAUL NELSON

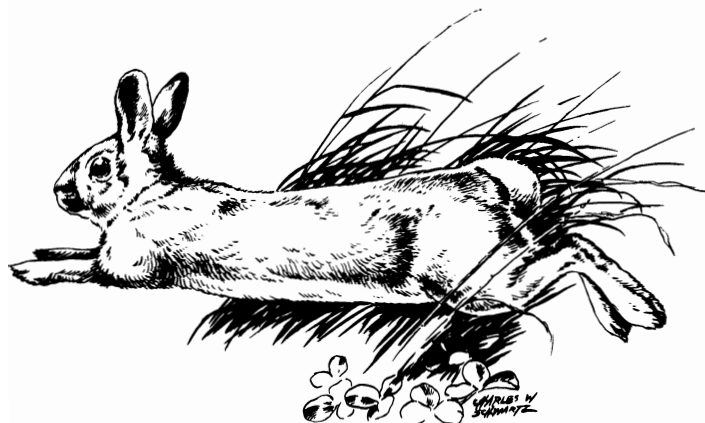


Mount Vernon Prairie Natural Area

A 40-acre area located four miles northeast of Mount Vernon in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 17, T28N, R26W, Miller 7.5 min. topographic map. Designated April 16, 1976.

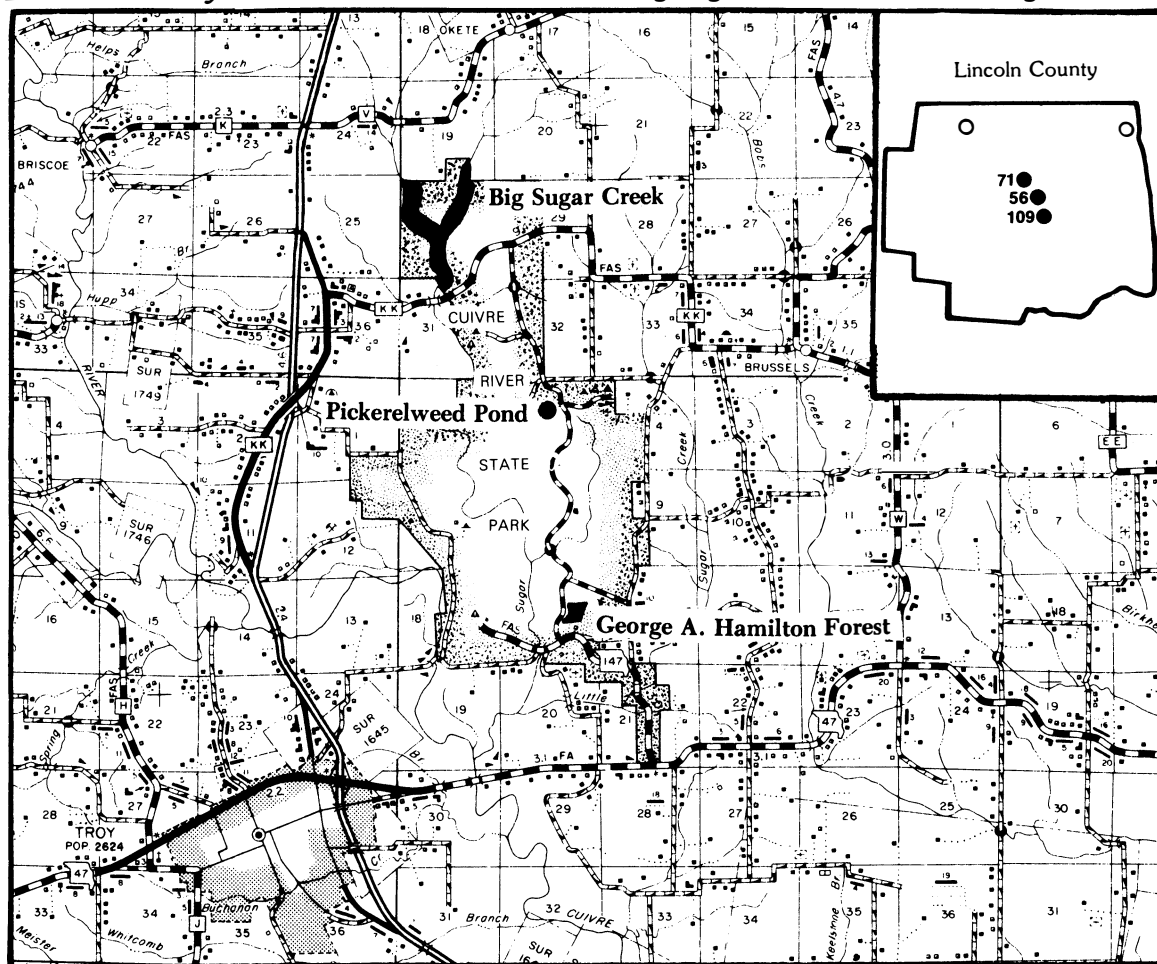
Natural Features—A remnant of upland tallgrass prairie in the Springfield Plateau Section of the Ozark Natural Division. The level to gently sloping prairie is on deep Hoberg soils which contain a fragipan at a depth of 16 to 36 inches.

Interesting plants include porcupine grass (*Stipa spartea*) and fringed poppy mallow (*Callirhoe digitata*). Mount Vernon Prairie is owned by The Nature Conservancy and leased to the Department of Conservation. This is a wildlife refuge. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



Cottontail rabbit

CHARLES W. SCHWARTZ



Pickerelweed Pond Natural Area

A three-acre portion of Cuivre River State Park in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5, T49N, R1E, Okete 7.5 min. topographic map. Designated March 30, 1978.

Natural Features—A quarter-acre upland sinkhole pond in the Lincoln Hills Section of the Glaciated Plains Natural Division. This pond provides breeding habitat for a number of amphibians infrequently encountered north of

the Missouri River. Aquatic plants include the rare naiad (*Najas gracillima*), and plants like pickerelweed (*Potederia cordata*) and American lotus (*Nelumbo lutea*). The Department of Natural Resources owns this area. For more information contact the Park Superintendent, Cuivre River State Park, Route 1, Box 25, Troy, Missouri 63379, phone 314/528-7247.

Big Sugar Creek Natural Area

A 2.3 mile reach (56 acres) of Big Sugar Creek within Cuivre River State Park including portions of Sec. 30 and 31, T50N, R1E, Okete 7.5 min. topographic map. Designated September 18, 1979.

Natural Features—Big Sugar Creek is a large, intermittent headwater stream within the Lincoln Hills Section of the Glaciated Plains Natural Division. Gravel bars, exposed

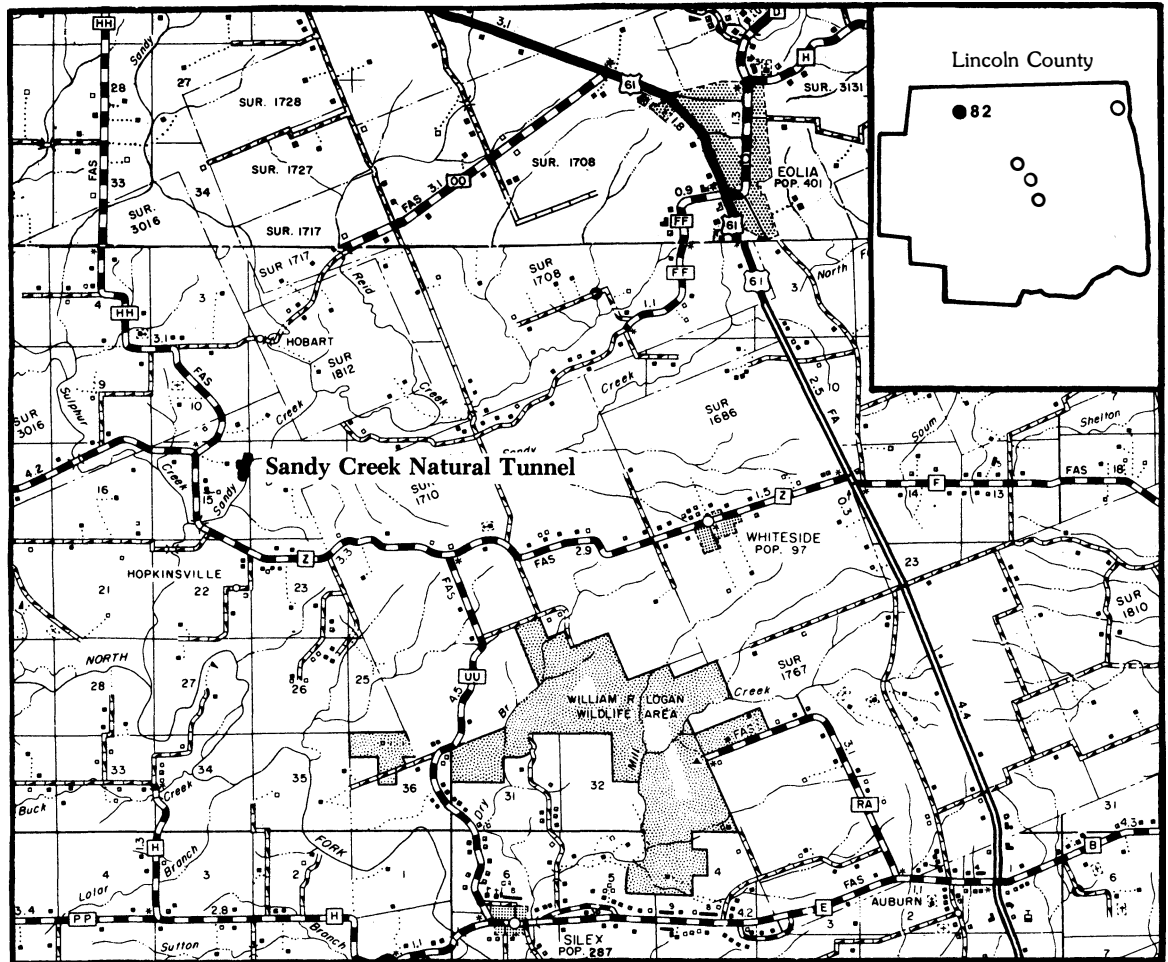
limestone bedrock and small bluffs line numerous pools and riffles along this picturesque stream. Aquatic life is representative of a transition stream between Ozark and prairie regions. Big Sugar Creek Natural Area is owned by the Department of Natural Resources. For further information contact the Superintendent, Cuivre River State Park, Route 1, Box 25, Troy, Missouri 63379, phone 314/528-7247.

George A. Hamilton Forest Natural Area

A 40-acre portion of Cuivre River State Park, NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 17, T45N, R1E, Okete 7.5 min. topographic map. Designated February 14, 1983.

Natural Features—North, east-trending valley and steep, wooded limestone slopes which drain into Big Sugar Creek. This is a mature white oak forest on an extremely rich mesic limestone slope with an abundance of spring

wildflowers. The George A. Hamilton Forest is one of the finest remnant forests in the Lincoln Hills Section of the Glaciated Plains Natural Division. The area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Cuivre River State Park, Route 1, Box 25, Troy, Missouri 63379, phone 314/528-7247.



Sandy Creek Natural Tunnel Natural Area

A 20-acre area on private land about six miles northwest of Whiteside in the E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 15, T51N, R2W, Eolia 7.5 min. topographic map. Access by landowner's permission. Designated October 27, 1980.

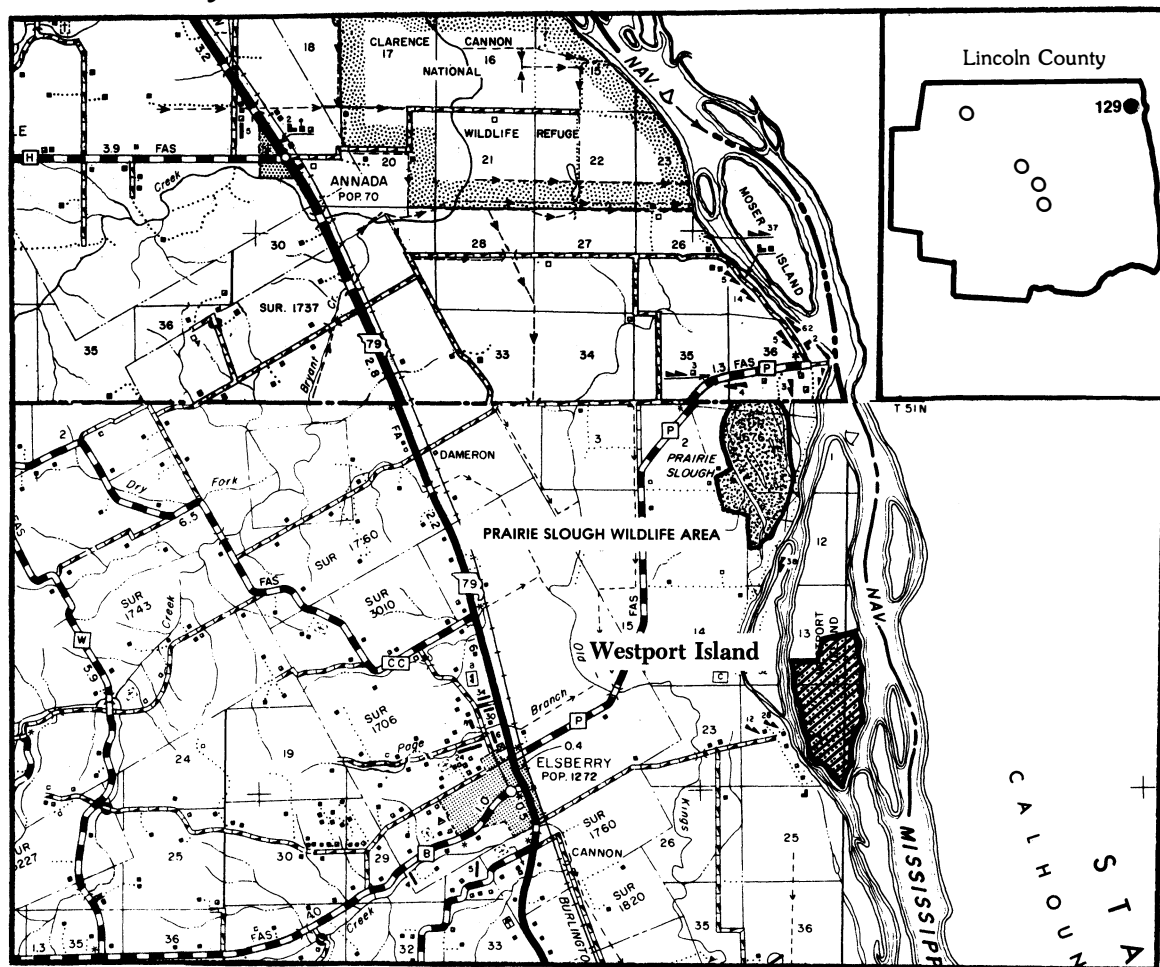
Natural Features—A natural tunnel in Burlington limestone, a limestone glade and cliff, and a headwaters

stream of the Lincoln Hills Section of the Glaciated Plains Natural Division. An informational brochure is available for this area. This area is owned and managed by Edith and Merton Carlson, Route 1A, Box 73, Eolia, Missouri 63444. It is registered with the Department of Conservation and is closed to hunting, fishing and collecting of any kind.

JOHN DENGEL / ST. LOUIS GLOBE-DEMOCRAT



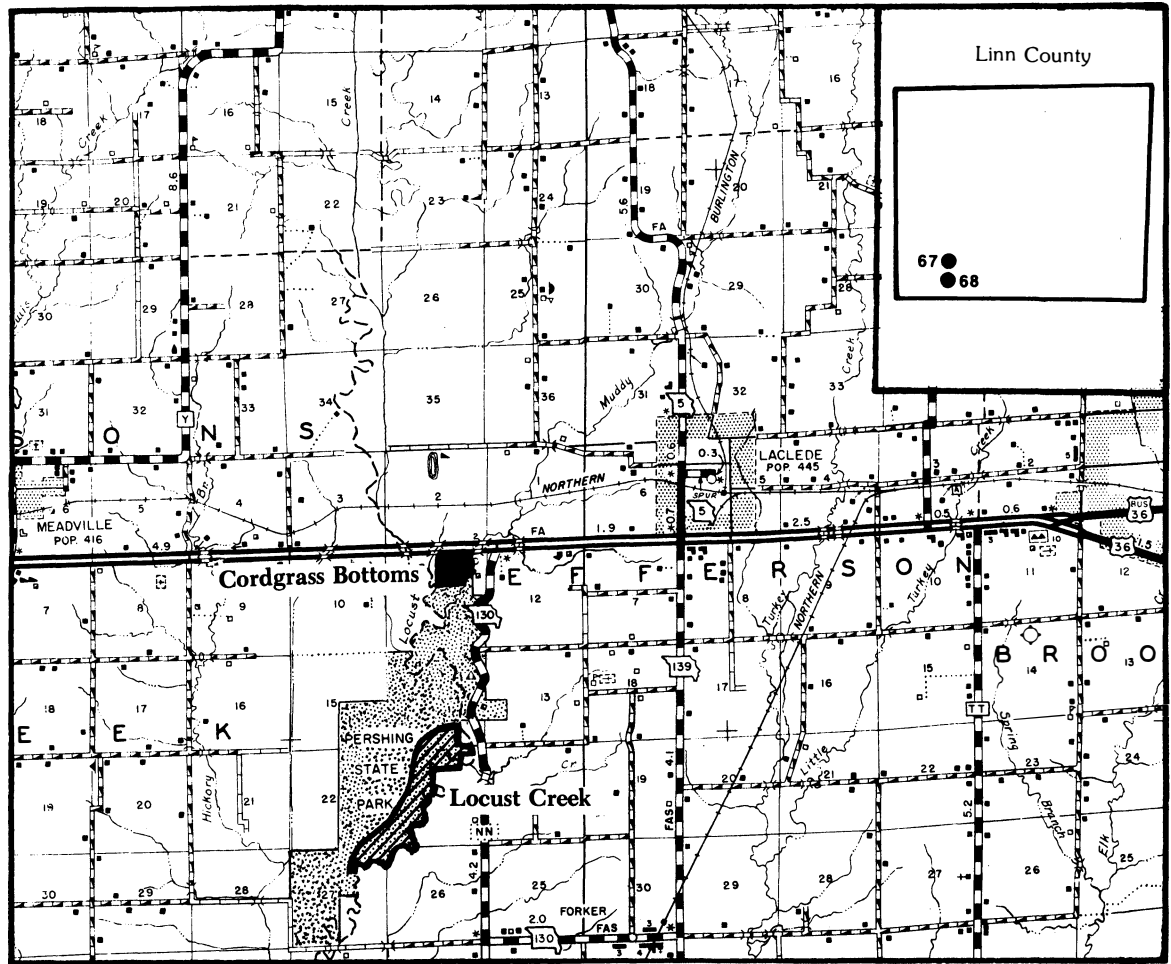
Sandy Creek Natural Tunnel



Westport Island Natural Area

A 480-acre portion of Westport Island in the Mississippi River about four miles northeast of Elsberry in Sec. 13 and 14, T10S, R2E, and Sec. 18 and 19, T10S, R3E, Hamburg 7.5 min. topographic map. Access to the natural area is by boat. Designated November 16, 1984.

Natural Features—Large, undisturbed, old-growth bottomland forest, sloughs, and shrub swamps of the Upper Mississippi Section of the Big Rivers Natural Division. Silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), pin oak (*Quercus palustris*) and pecan (*Carya illinoensis*) are the dominant trees of the bottomland forest. Long, narrow sloughs wind through the forest providing habitat for wood ducks, shorebirds, herons, turtles and many fishes. Some of the sloughs have permanent water, while others dry up during the summer. Westport Island is owned by the St. Louis District, U.S. Army Corps of Engineers and is managed by the Department of Conservation as part of the Upper Mississippi Wildlife Area. For further information contact the Area Manager, Upper Mississippi Wildlife Area, P.O. Box 201, Elsberry, Missouri 63343, phone 314/898-5327.



Cordgrass Bottoms Natural Area

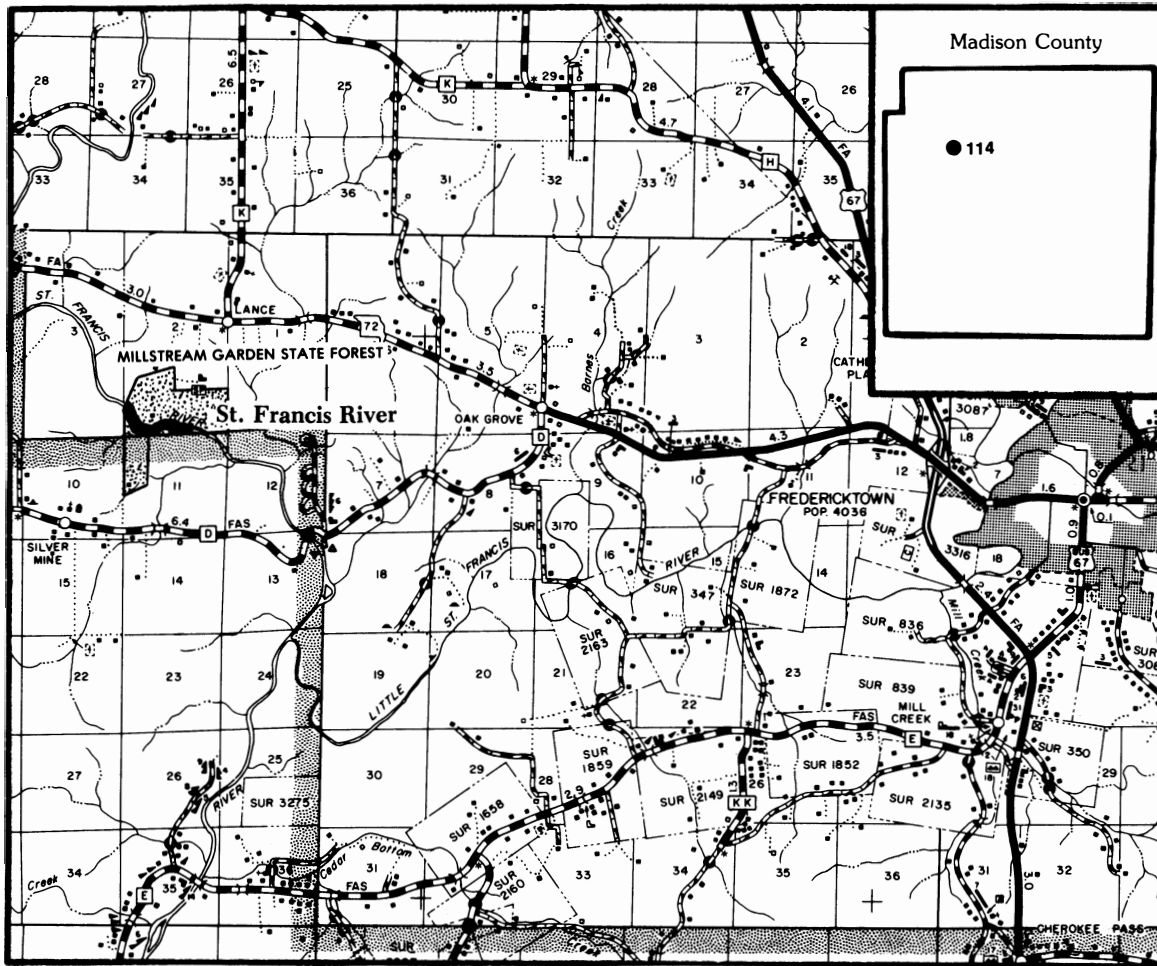
An 80-acre area within Pershing State Park in the NE¼ Sec. 11, T57N, R21W, Brookfield 15 min. topographic map. Designated February 14, 1979.

Natural Features—A 30-acre cordgrass marsh prairie surrounded by 50 acres of wet bottomland forest along Locust Creek in the Grand River Section of the Glaciated Plains Natural Division. Characteristic plants include cordgrass, cow parsnip, blue flag, arrowleaf and the pinkweed (*Polygonum coccineum*). The area is owned by the Department of Natural Resources. For further information contact the Superintendent, Pershing State Park, Laclede, Missouri 64651, phone 816/963-2299.

Locust Creek Natural Area

A 330-acre portion of Pershing State Park, including parts of Sec. 14, 22, 23, 26 and 27, T57N, R21W, Sumner 7.5 min. topographic map. Designated June 3, 1979.

Natural Features—Locust Creek represents one of the last examples in northern Missouri of an active meandering river system and its associated oxbow sloughs, swamps and rich floodplain forest. It is a rare forested remnant in the Grand River Section of the Glaciated Plains Natural Division and offers high-quality examples of aquatic community types in that region of the state. Much of the forest consists of old growth shellbark hickory, cottonwood and bur, pin and swamp white oak. Missouri's rare ostrich fern forms dense clumps at several locations. The area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Pershing State Park, Laclede, Missouri 64651, phone 816/963-2299.

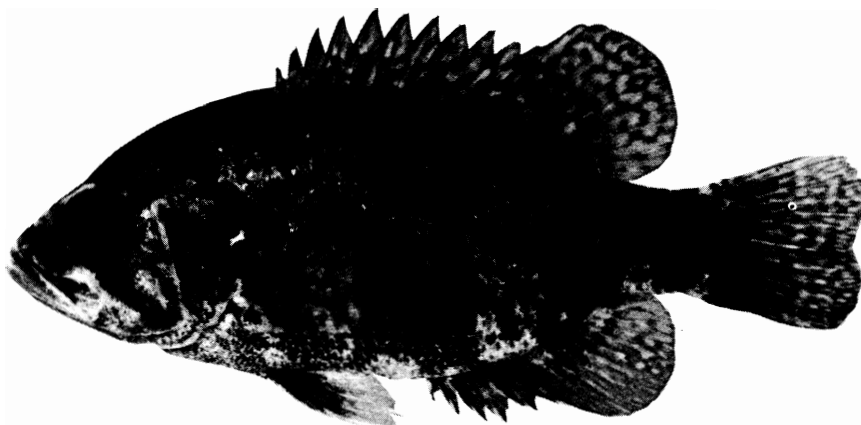


St. Francis River Natural Area

A 1.2 mile reach of the St. Francis River and a buffer zone on either side within Millstream Gardens State Forest about ten miles east of Ironton off Hwy 72. Part of Sec. 2 and 11, T33N, R5E, Rhodes Mountain 7.5 min. topographic map. Designated June 20, 1983.

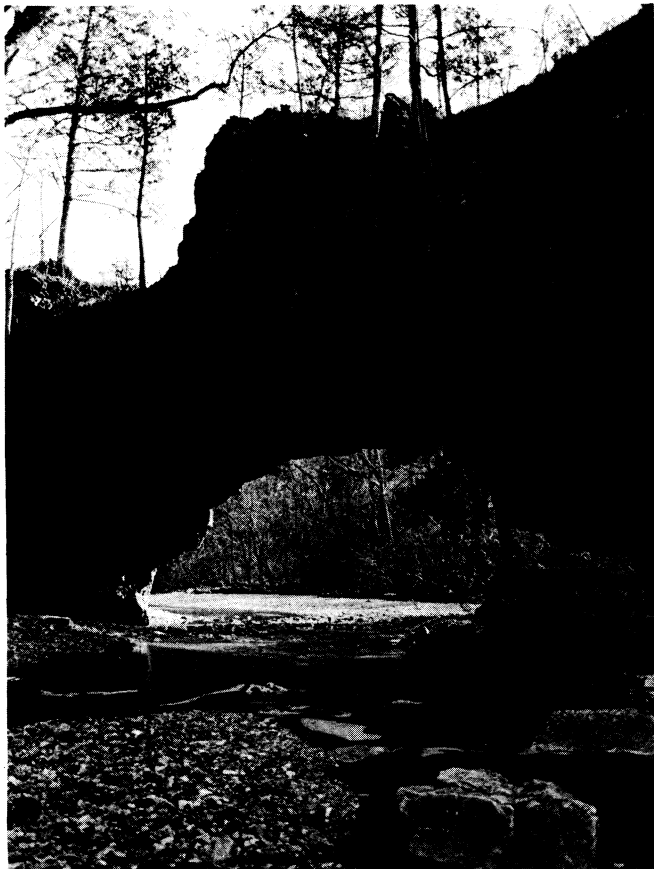
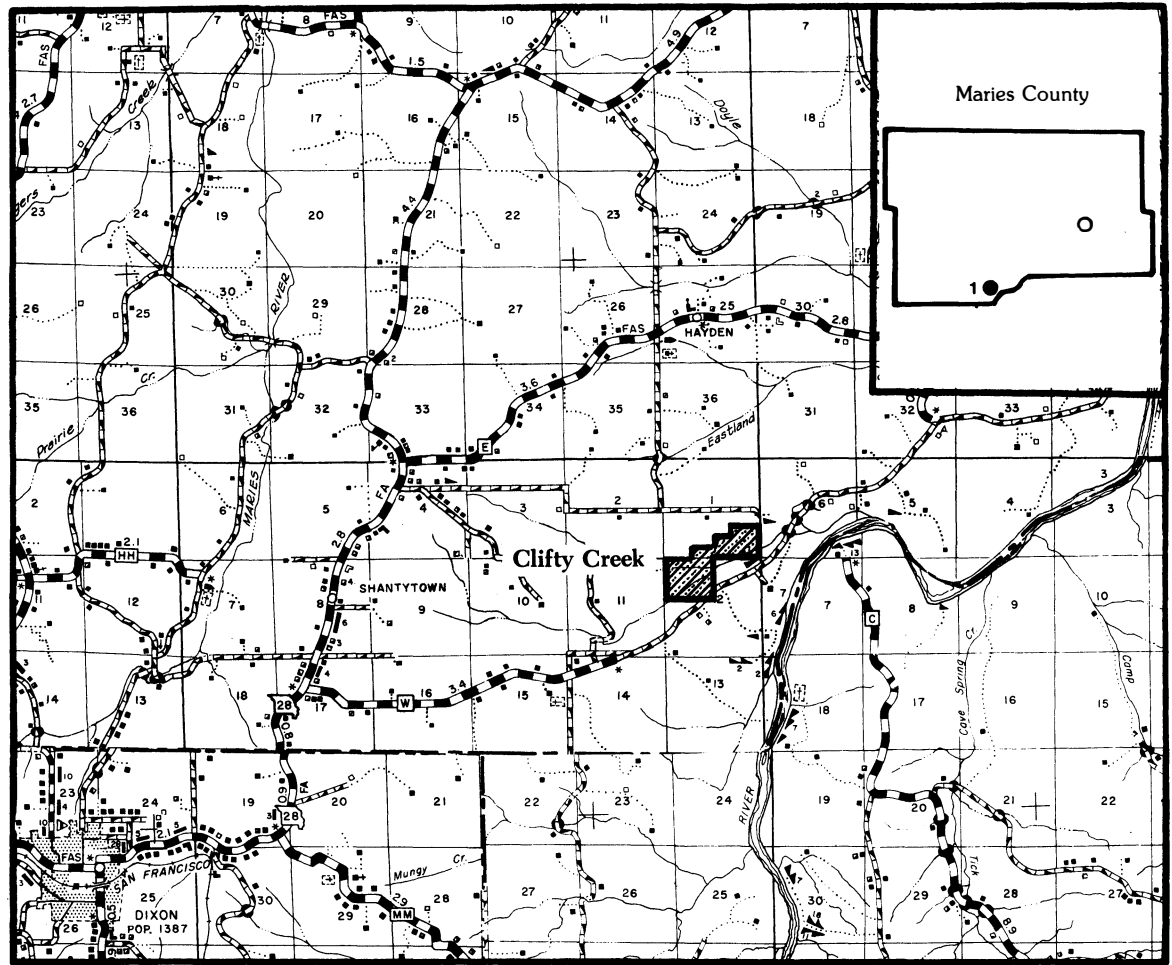
Natural Features—A large stream (St. Francis River) with an adjoining slough, and large igneous shut-ins in the St. Francois Mountains Section of the Ozark Natural Divi-

sion. A great variety of animals live in the river, including the rare eastern slim minnow (*Pimephales tenellus parviceps*) and several species of crayfish. The spectacular stretch of shut-ins is a significant geological feature. This area is owned by the Department of Conservation. For further information contact the District Forester, Perryville Forest District, Box 152 (West Hwy T), Perryville, Missouri 63775, phone 417/451-1569.



Shadow bass (*Ambloplites ariommus*)

WILLIAM PFIEGER



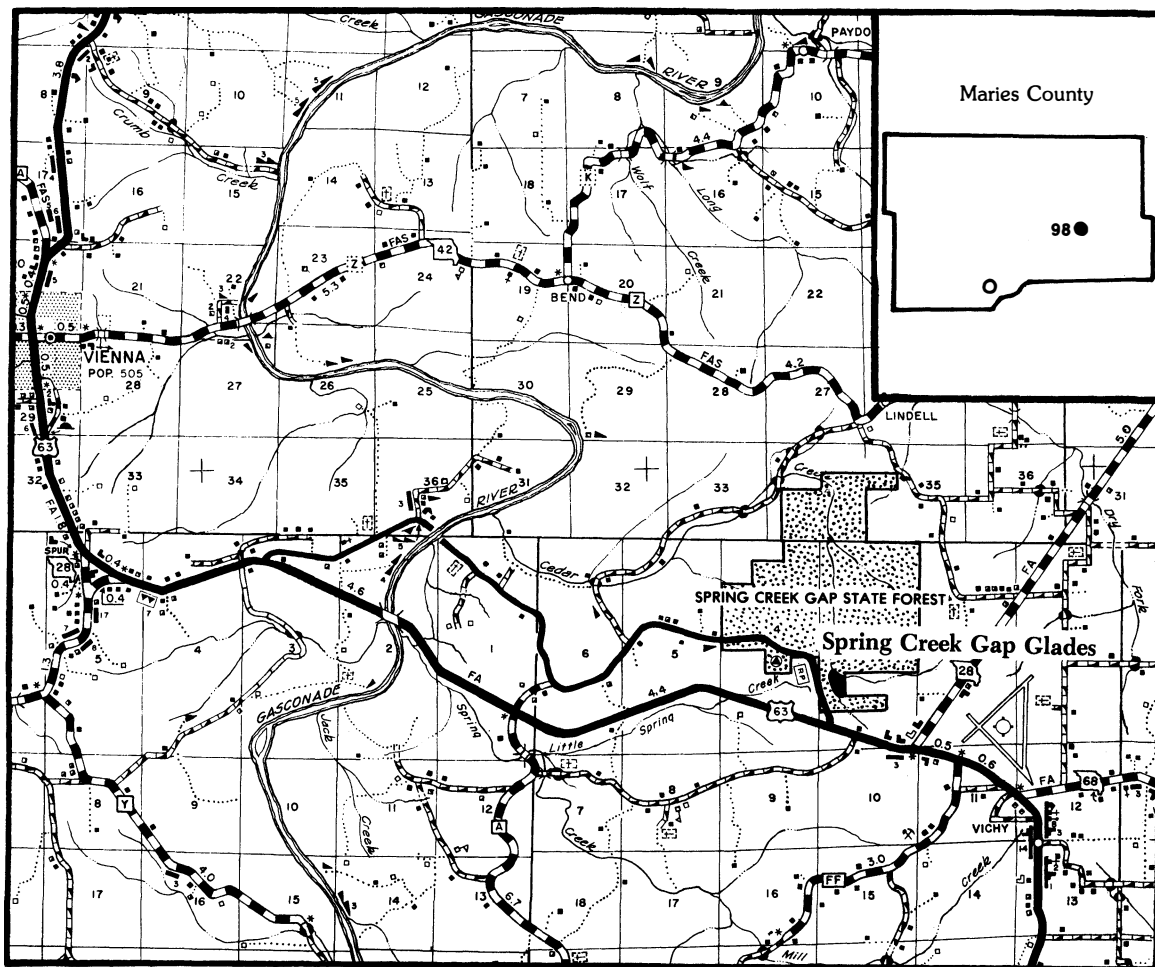
RICHARD THOM

Clifty Creek Natural Area

A 230-acre area south of Hayden off Hwy W in part of Sec. 1 and 12, T38N, R10W, Nagogami Lodge 7.5 min. topographic map. Access is by foot from a county road off Hwy W. Designated December 20, 1971.

Natural Features—Oak-hickory forest, mixed bottom-land forest, limestone glades, cliffs, a natural bridge and a headwaters stream of the Upper Ozark Section of the Ozark Natural Division. The scenic natural bridge, with a span of about 40 feet, is carved through Gasconade dolomite by a tributary of Clifty Creek. The natural area is owned by the L-A-D Foundation and managed by the Department of Conservation. For further information contact the District Forester, Gasconade Forest District, Box 509 (Jct. E & Y), Rolla, Missouri 65401, phone 314/364-4221.

Clifty Creek Natural Bridge



Spring Creek Gap Glades Natural Area

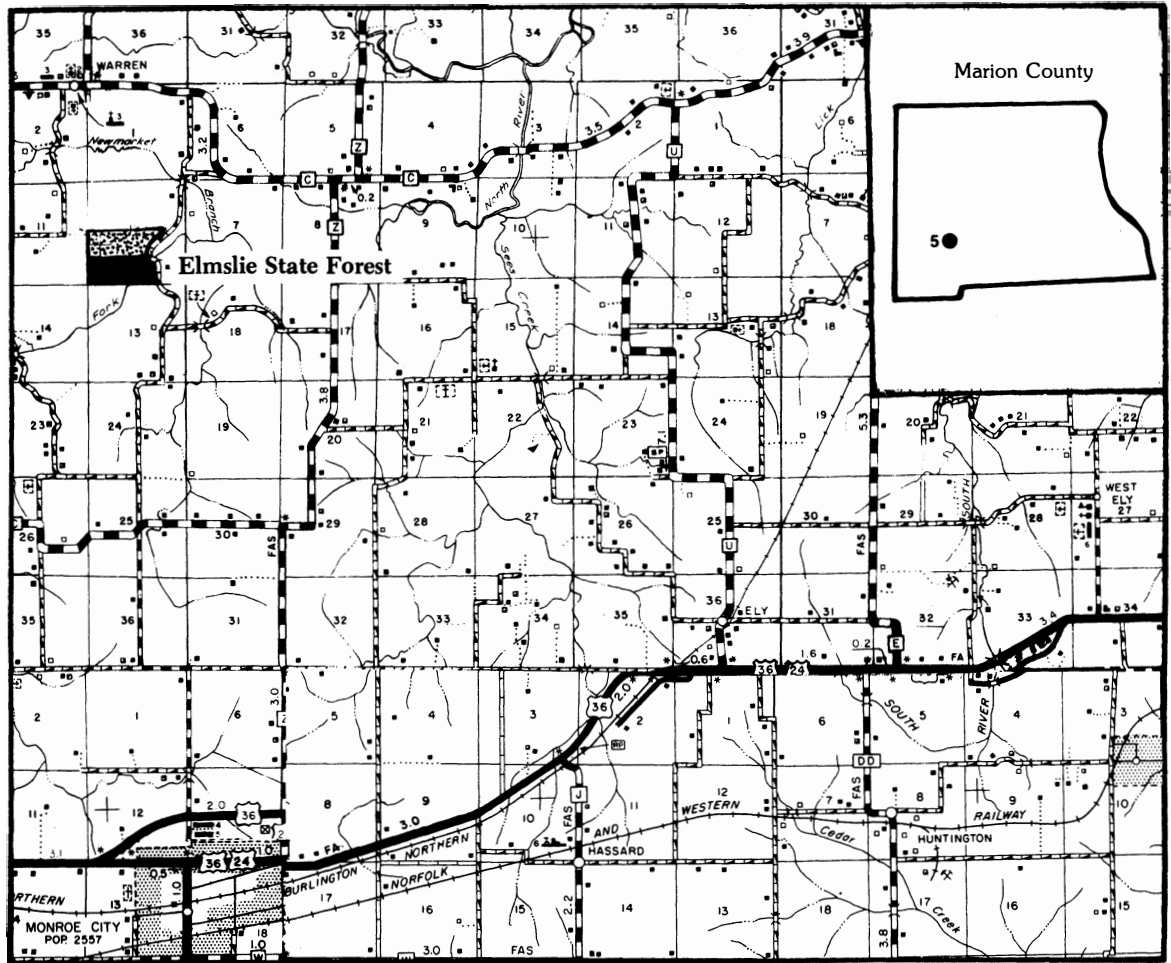
A 40-acre portion of the Spring Creek Gap State Forest, about nine miles SE of Vienna off of U.S. Hwy 63 in Sec. 3, T39N, R8W, Paydown 7.5 min. topographic map. Designated March 22, 1982.

Natural Features—Small glades on Jefferson City dolomite and associated plants and animals in the Upper Ozark Section of the Ozark Natural Division. Yellow cone-flower (*Echinacea paradoxa*) is one of the many interesting and colorful plants that grow on these glades. This area is owned by the Department of Conservation. For further information contact the District Forester, Gasconade Forest District, Box 509 (Jct. E & Y), Rolla, Missouri 65401, phone 314/364-4221.



Monarch on butterfly weed

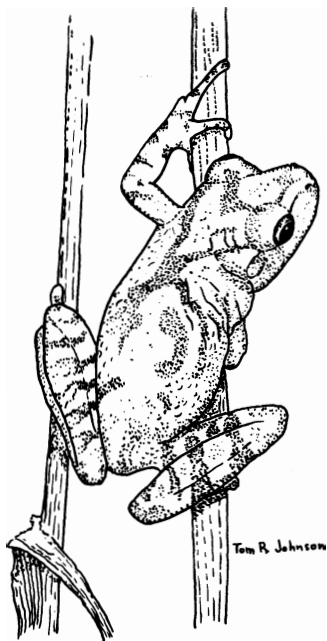
JAMES D. WILSON



Elmslie State Forest Natural Area

A 100-acre area in Elmslie State Forest, six miles north of Monroe City in Sec. 12, T57N, R8W, Hunnewell and Monroe City 7.5 min. topographic maps. Access is from a county road. Designated December 20, 1971.

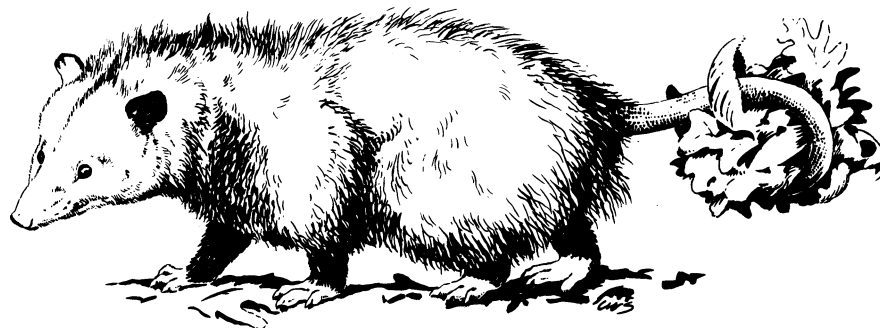
Natural Features—Several upland forest communities with high plant diversity in hills and draws along the South Fork of the North River in the Eastern Section of the Glaciated Plains Natural Division. Some of the dominant trees are post, white and northern red oak. Bottomland forest occurs along the river and several dry, open forest areas occur where soil is especially shallow and rocky. Elmslie State Forest is owned by the Department of Conservation. For further information contact the District Forester, Hannibal Forest District, Box 324 (Tower Plaza, 655 Clinic Rd.), Hannibal, Missouri 63401, phone 314/221-4805.



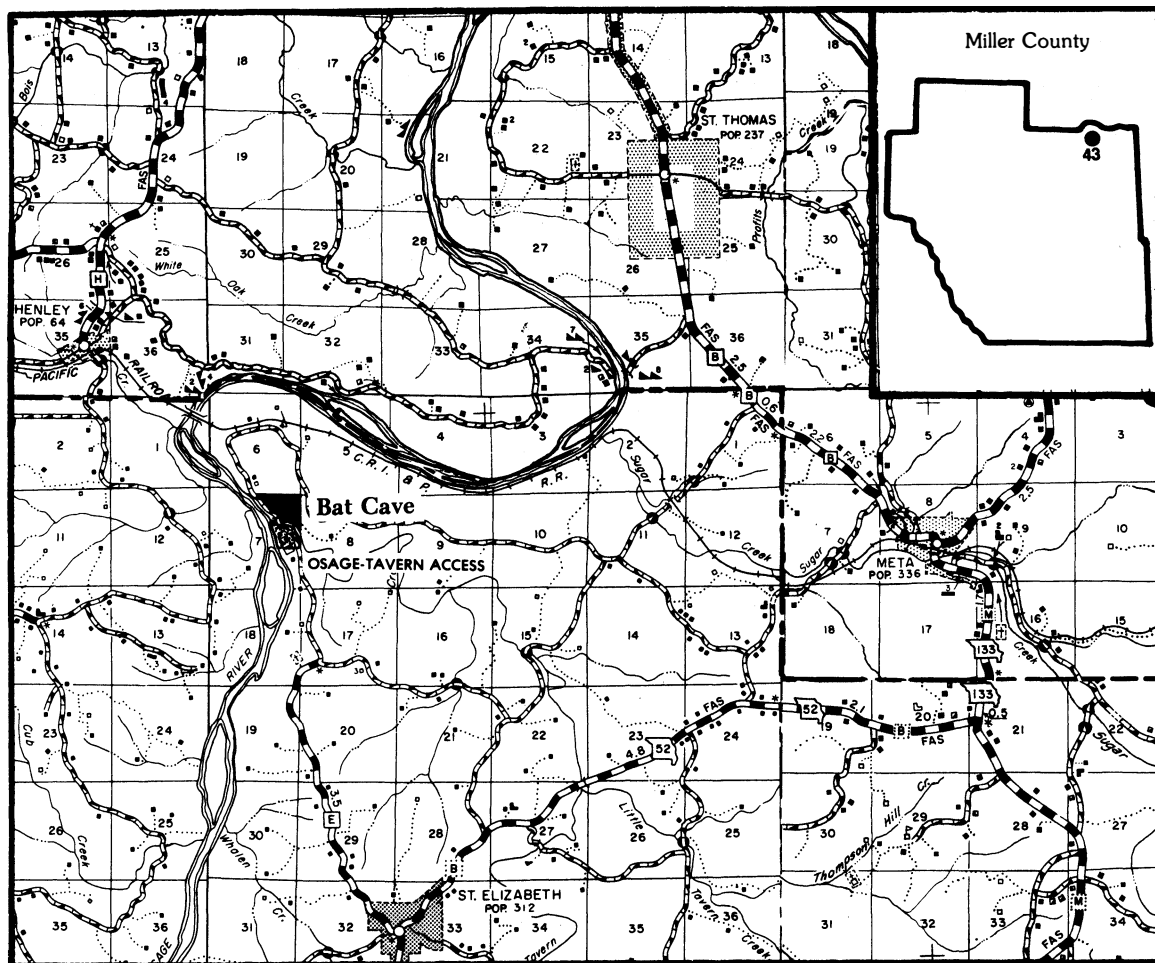
Northern spring peeper

TOM R. JOHNSON

River Section of the Glaciated Plains Natural Division. Bagley Woods is owned by the Department of Conservation. Because of difficult access, the area manager should be contacted prior to visiting Bagley Woods. For further information, contact the Area Manager, Lake Paho Wildlife Area, Route 2, Box 162, Princeton, Missouri 64673, phone 816/748-4175.



CHARLES W. SCHWARTZ

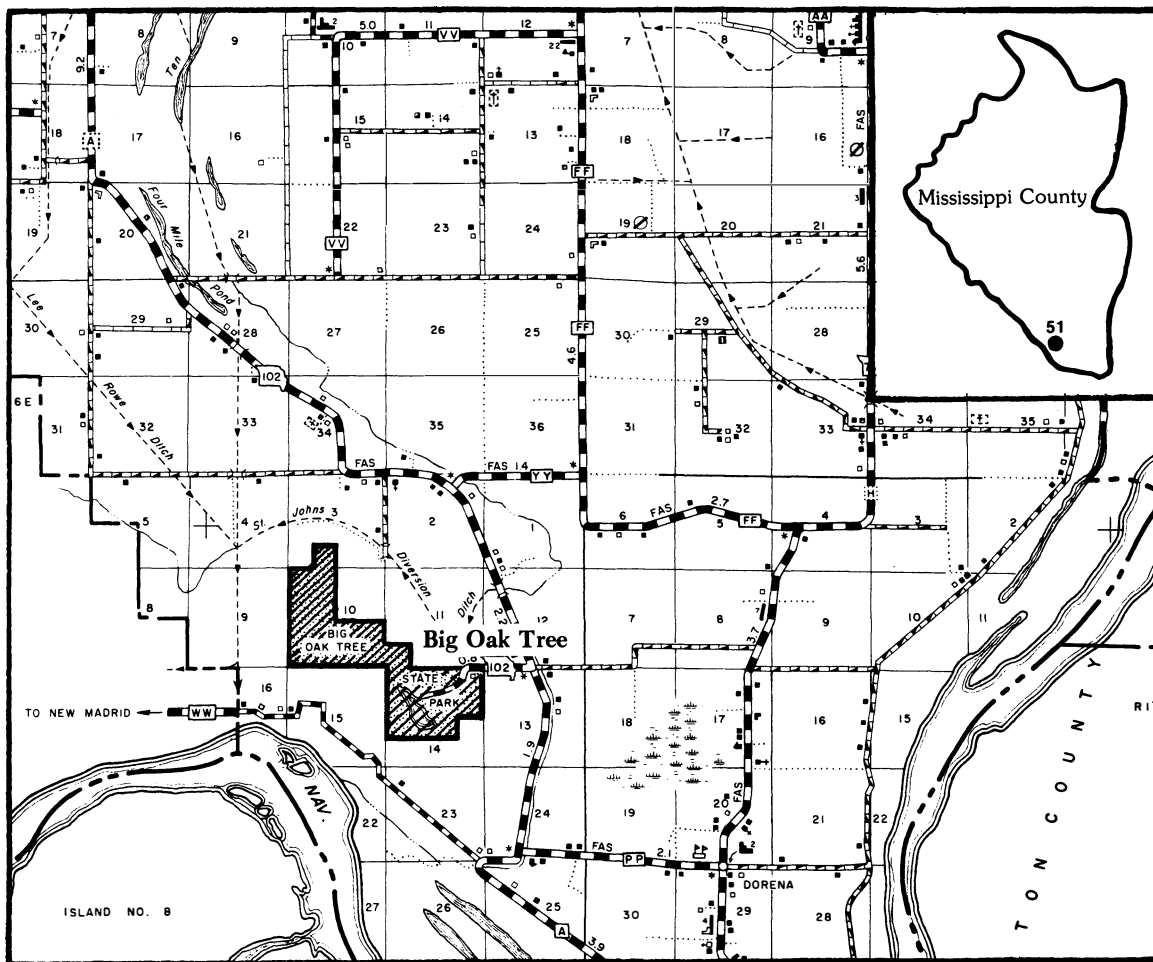


Bat Cave Natural Area

A 30-acre area near St. Elizabeth in Sec. 7, T41N, R12W, Eugene SE 7.5 min. topographic map. Access is from a county gravel road across from the Osage-Tavern Creek River Access. Designated February 13, 1976.

Natural Features—A cave used as a nursery site by a large colony of the endangered gray bat. The cave has a spectacular entrance in the middle of a sheer dolomite cliff. Although the entrance is large, the cave itself is not extensive. The cave entrance is inaccessible due to its location on the cliff face. The cave is closed to the public to protect the endangered bats and for safety reasons. Bat Cave is owned by the Department of Conservation. For further information, contact the District Forester, Lake Ozark Forest District, Box 911, Lebanon, Missouri 65536, phone 417/532-7612.

Entrance to Bat Cave



Big Oak Tree Natural Area

A 940-acre part of Big Oak Tree State Park. Boundaries include park land in Sec. 3, 10, 11 and 14, T23N, R16E, Bayouville 7.5 min. topographic map. Designated October 27, 1977.

Natural Features—Big Oak Tree Natural Area is a remnant of the vast bottomland forest and swamp that once covered the Mississippi Lowlands Natural Division. There is an 80-acre portion of virgin wet-mesic bottomland forest. The park, often called "The Park of Champions," has a tree canopy averaging 120 feet with several trees more than 140 feet tall. Twelve trees qualify as national champions, including a persimmon which is over 133 feet tall. The half-mile-long boardwalk provides access to points of interest which are interpreted in a special self-guiding trail brochure. Over 146 species of birds have been recorded, including the endangered Swainson's warbler and the rare Mississippi kite. The area's shrub swamp is Missouri's only known location for the western chicken turtle. Big Oak Tree State Park is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Big Oak Tree State Park, Route 2, Box 343, East Prairie, Missouri 63845, phone 314/649-3149.



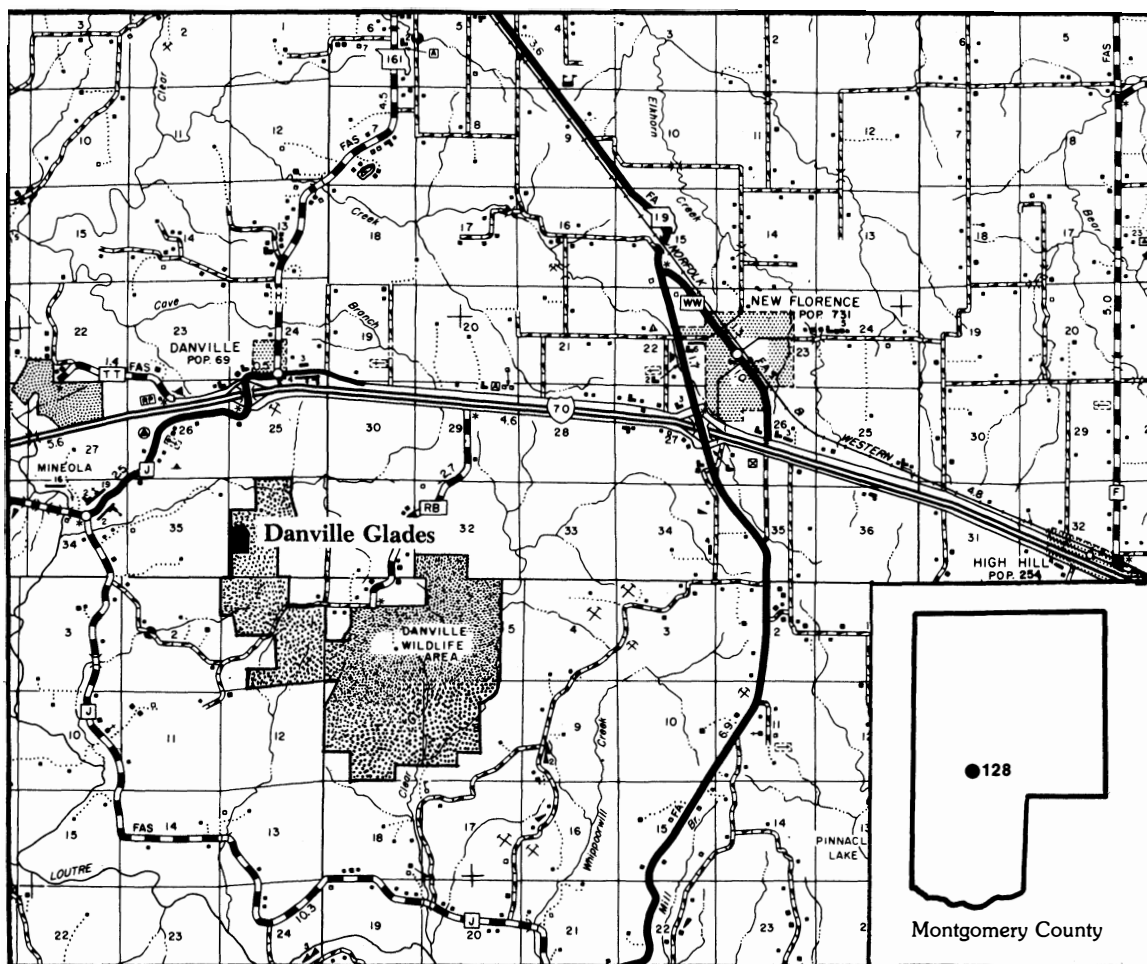
Bur oak at Big Oak Tree State Park

Rocky Hollow Natural Area

This 191-acre area in Monroe County is owned by the L-A-D Foundation and managed by the Department of Conservation. For further information contact the District Forester, Hannibal Forest District, Box 324, (Tower Plaza, 655 Clinic Rd.) Hannibal, Missouri 63401, 314/221-4805.

128 Danville Glades

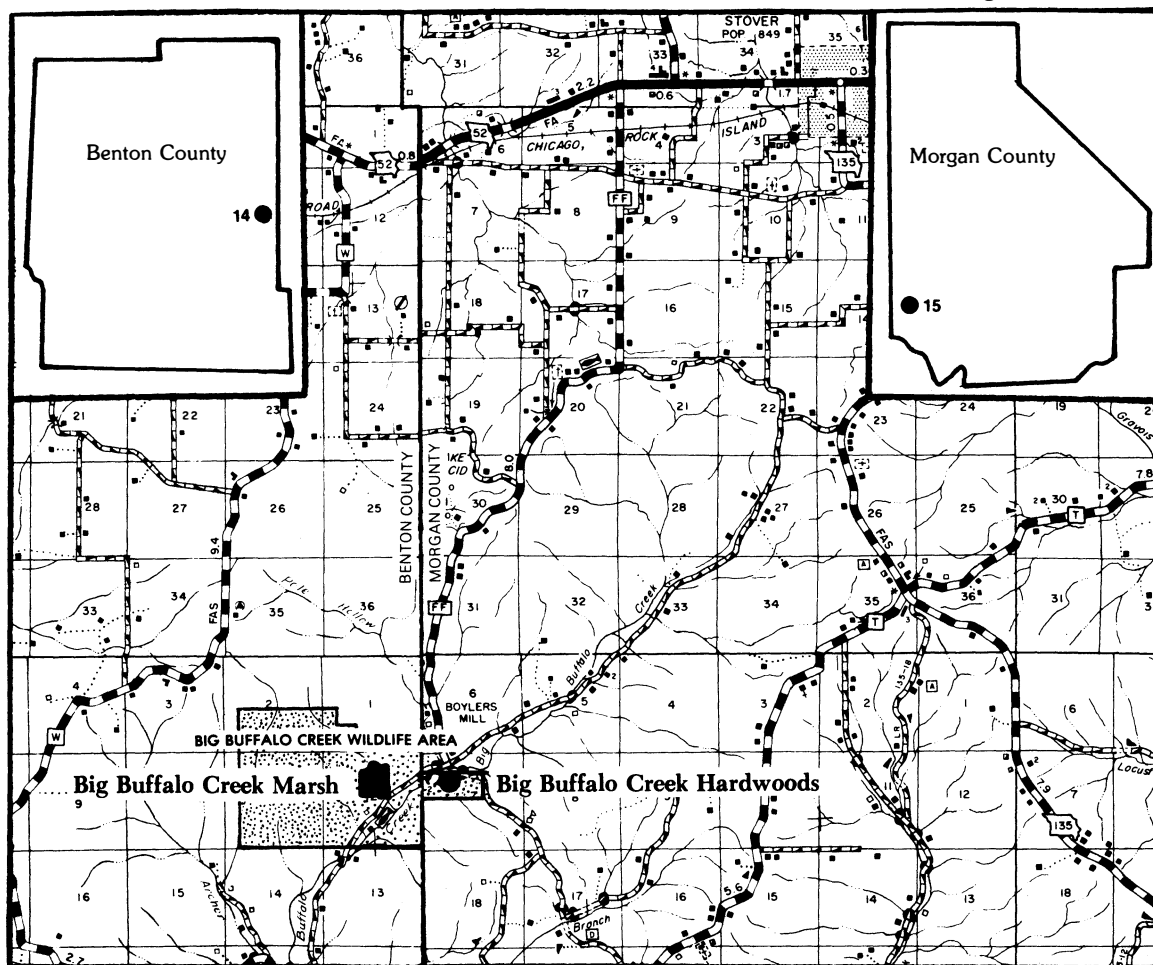
Montgomery County

**Danville Glades Natural Area**

A 48-acre portion of Danville Wildlife Area about two miles south of Danville in Sec. 36, T48N, R6W, Montgomery City 7.5 min. topographic map. Access requires walking about one mile from a parking lot on the wildlife area. Designated November 16, 1984.

Natural Features—About six acres of limestone glades with characteristic plants and animals in the Missouri River Section of the Ozark Border Natural Division. Little bluestem (*Andropogon scoparius*), side-oats grama (*Bouteloua curtipendula*), pale coneflower (*Echinacea pallida*), false pennyroyal (*Isanthus brachiatus*) and stick leaf

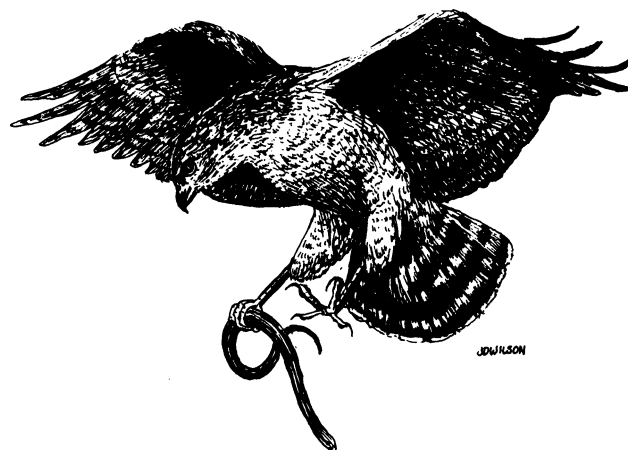
(*Mentzelia oligosperma*) are common plants of the glade. The remainder of the natural area is upland forest dominated by white oak (*Quercus alba*), post oak (*Quercus stellata*), chinquapin oak (*Quercus muhlenbergii*), sugar maple (*Acer saccharum*) and red cedar (*Juniperus virginiana*). The dominant trees are about 90 to 120 years old. Danville Glades is owned by the Department of Conservation. For further information contact the Area Manager, Whetstone Creek Wildlife Area, Box 2, Williamsburg, Missouri 63388, phone 314/254-3330.



Big Buffalo Creek Hardwoods Natural Area

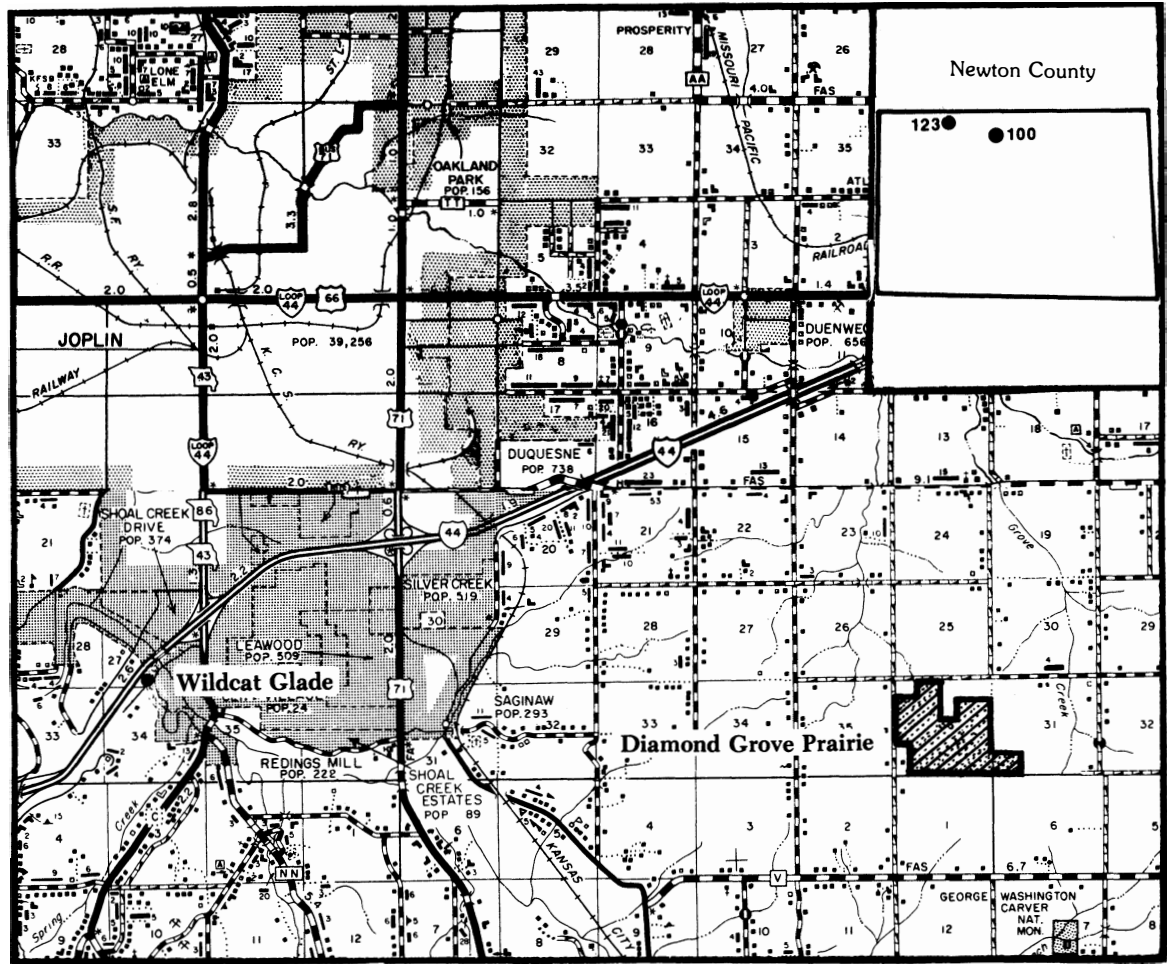
A five-acre portion of Big Buffalo Creek Wildlife Area, ten miles southwest of Stover off Hwy FF in S½ NW¼ Sec. 7, T41N, R19W, Boylers Mill 7.5 min. topographic map. Designated June 27, 1972.

Natural Features—A small bottomland forest (sycamore, walnut, slippery elm and butternut) with a rich wildflower flora on deep loam soils in the Upper Ozark Section of the Ozark Natural Division. Big Buffalo Creek Hardwoods Natural Area is owned and managed by the Department of Conservation. For further information contact the Division of Fisheries, Missouri Department of Conservation, P.O. Box 180, Jefferson City, Missouri 65102, phone 314/751-4115.



Red-shouldered hawk

JAMES D. WILSON



Diamond Grove Prairie Natural Area

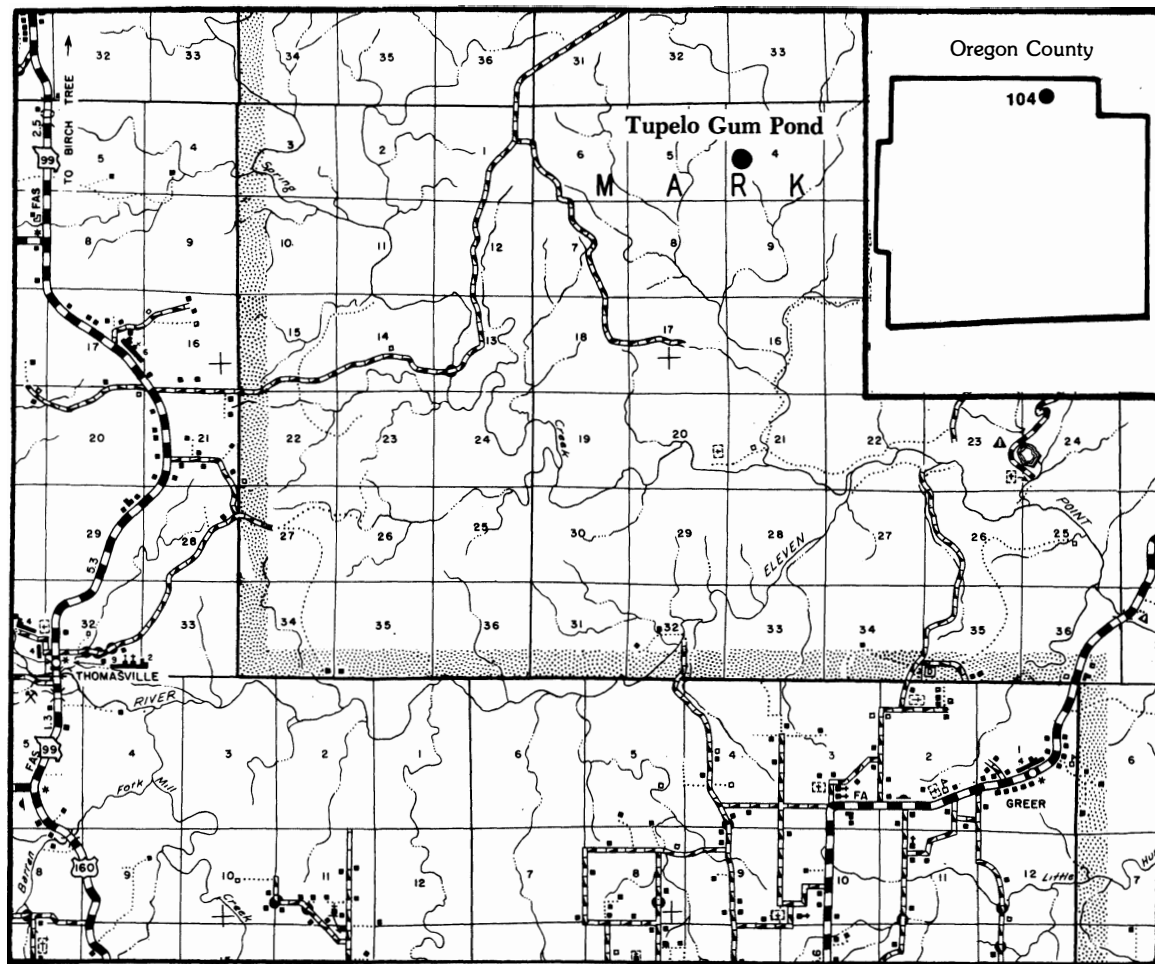
A 515-acre area $3\frac{1}{2}$ miles west of Diamond and four miles east of Joplin. Part of Sec. 36 and 31, T27N, R31-32W, Joplin East and Fidelity 7.5 min. topographic maps. Designated August 27, 1982.

Natural Features—A large, upland tallgrass prairie in the Springfield Plateau Section of the Ozark Natural Division. This nearly level to gently rolling prairie occurs on deep fragipan soils which are mostly Keeno cherty silt loam, Hoberg silt loam and Gerald silt loam. The prairie harbors a variety of wildlife including prairie chickens. Interesting plants such as royal catchfly (*Silene regia*), Barbara's buttons (*Marshallia caespitosa*), blue star (*Amsonia tabernaemontana*) and fringed poppy mallow (*Callirhoe digitata*) are found there. Diamond Grove Prairie is the pioneer name for the original prairie of which the natural area is a remnant. It is owned by the Department of Conservation. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.

Wildcat Glade Natural Area

A 15-acre area on the southwest edge of Joplin on the west side of Wildcat Park. Part of the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 27, T27N, R33W, Joplin West 7.5 min. topographic map. Designated February 17, 1984.

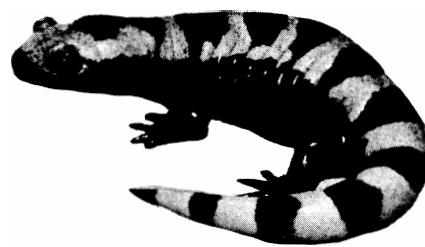
Natural Features—This and another chert glade in Wildcat Park are the largest and best examples of the rare natural community type of the Springfield Plateau Section of the Ozark Natural Division. This colorful glade has formed on beds of chert of the Elsie formation. Outcrops of solid chert are restricted in Missouri to a small region in this part of the state. The glade vegetation forms a mosaic ranging from lichen-covered rocks to patches of gnarled, stunted oaks. The glade plants are especially colorful in the spring and include prickly pear cactus (*Opuntia compressa*), glade wild onion (*Allium mutabile*), rock pink (*Talinum parviflorum*) and the unusual Barbara's buttons (*Marshallia caespitosa*). Lichen grasshoppers blend with the lichen-covered rocks, becoming visible only when they jump. Wildcat Glade is owned and managed by the City of Joplin and registered with the Department of Conservation. For further information contact the Joplin Parks and Recreation Department, 212 W. 8th St., Joplin, Missouri 64802, phone 417/624-0820.



Tupelo Gum Pond Natural Area

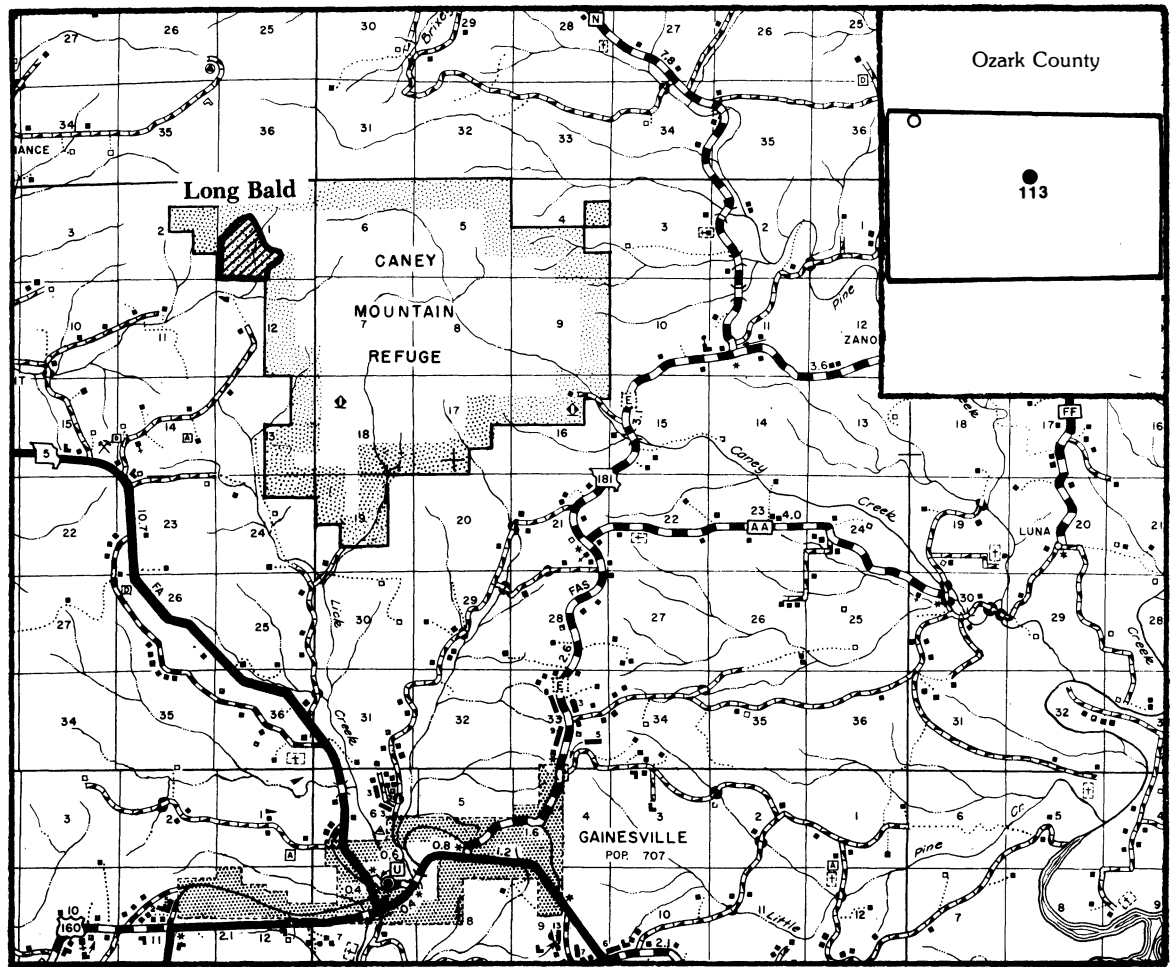
A 32-acre portion of the Mark Twain National Forest about ten miles southeast of Birch Tree in Sec. 4, T25N, R4W, Birch Tree 15 min. topographic map. Access requires about two miles of travel on a woods road that is usually impassable for cars. The area is difficult to locate and a topographic map is recommended. Designated August 31, 1982.

Natural Features—A five-acre sinkhole pond with swamp vegetation ringed with swamp tupelo, a tree not normally found in the Ozark uplands. The pond is surrounded by typical oak-hickory forest. The pond contains several rare plants, including the endangered Canby's bulrush (*Scirpus etuberculatus*) and horsetail spikerush (*Eleocharis equisetoides*). In the Lower Ozark Section of the Ozark Natural Division. Tupelo Gum Pond is owned and managed by the U.S. Forest Service. It is registered with the Department of Conservation. For further information contact District Ranger, Winona Ranger District, Mark Twain National Forest, Route 1, Box 182, Hwy 19 North, Winona, Missouri 65588, phone 314/325-4233.



Marbled salamander

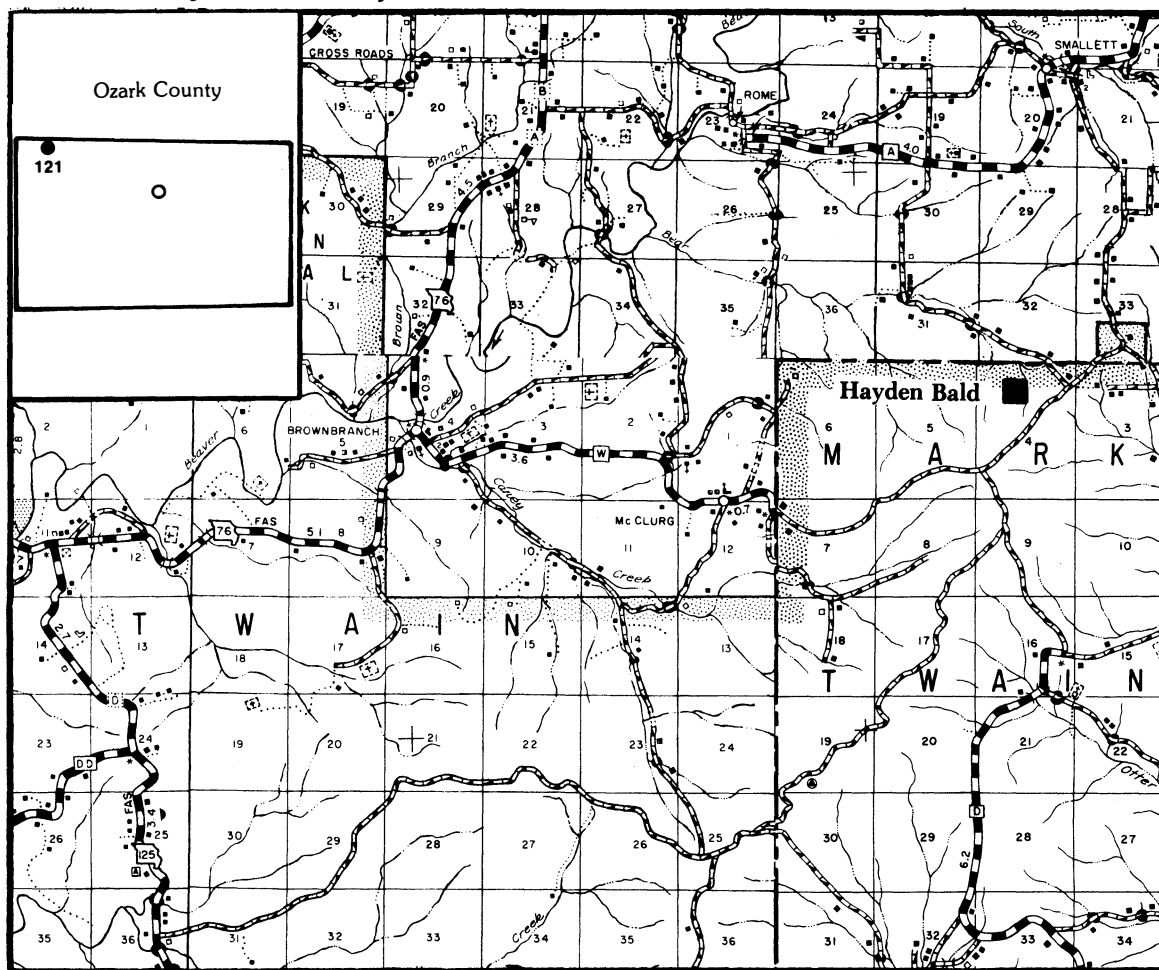
TOM. R. JOHNSON



Long Bald Natural Area

A 170-acre area located north of Gainesville within the 6,574-acre Caney Mountain Wildlife Area in Sec. 1, T23N, R14W, Gainesville NW 7.5 min. topographic map. Designated June 20, 1983.

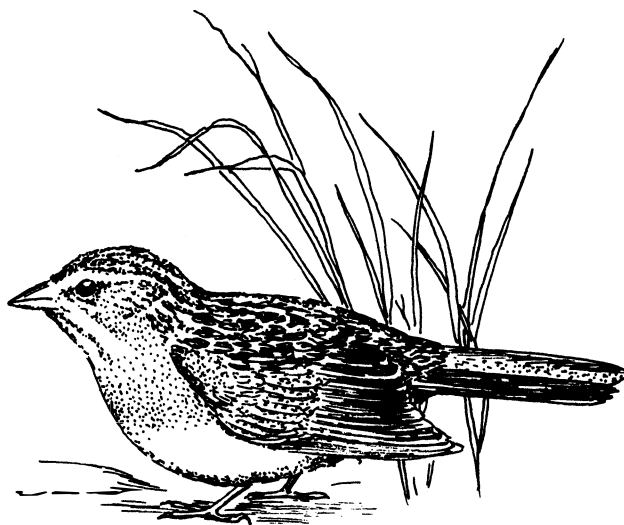
Natural Features—Glades on Jefferson City-Cotter dolomite and upland forest with a variety of plants and animals in the White River Section of the Ozark Natural Division. Long Bald is owned by the Department of Conservation. Caney Mountain Wildlife Area is a wildlife refuge. For further information contact the Wildlife Area Manager, Caney Mountain Wildlife Area, Gainesville, Missouri 65655, phone 417/679-4218.



Hayden Bald Natural Area

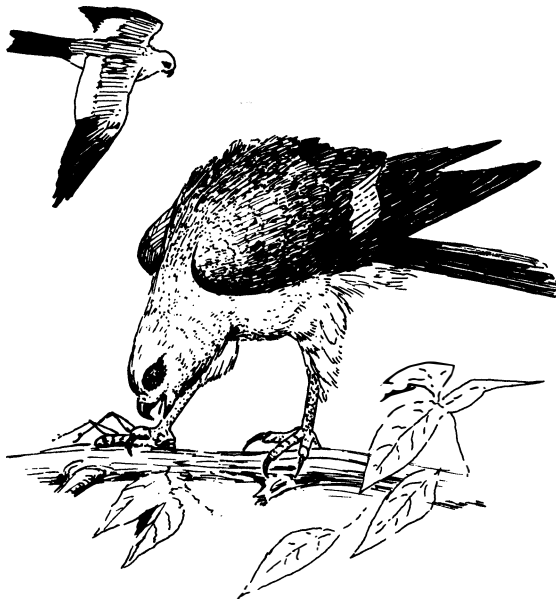
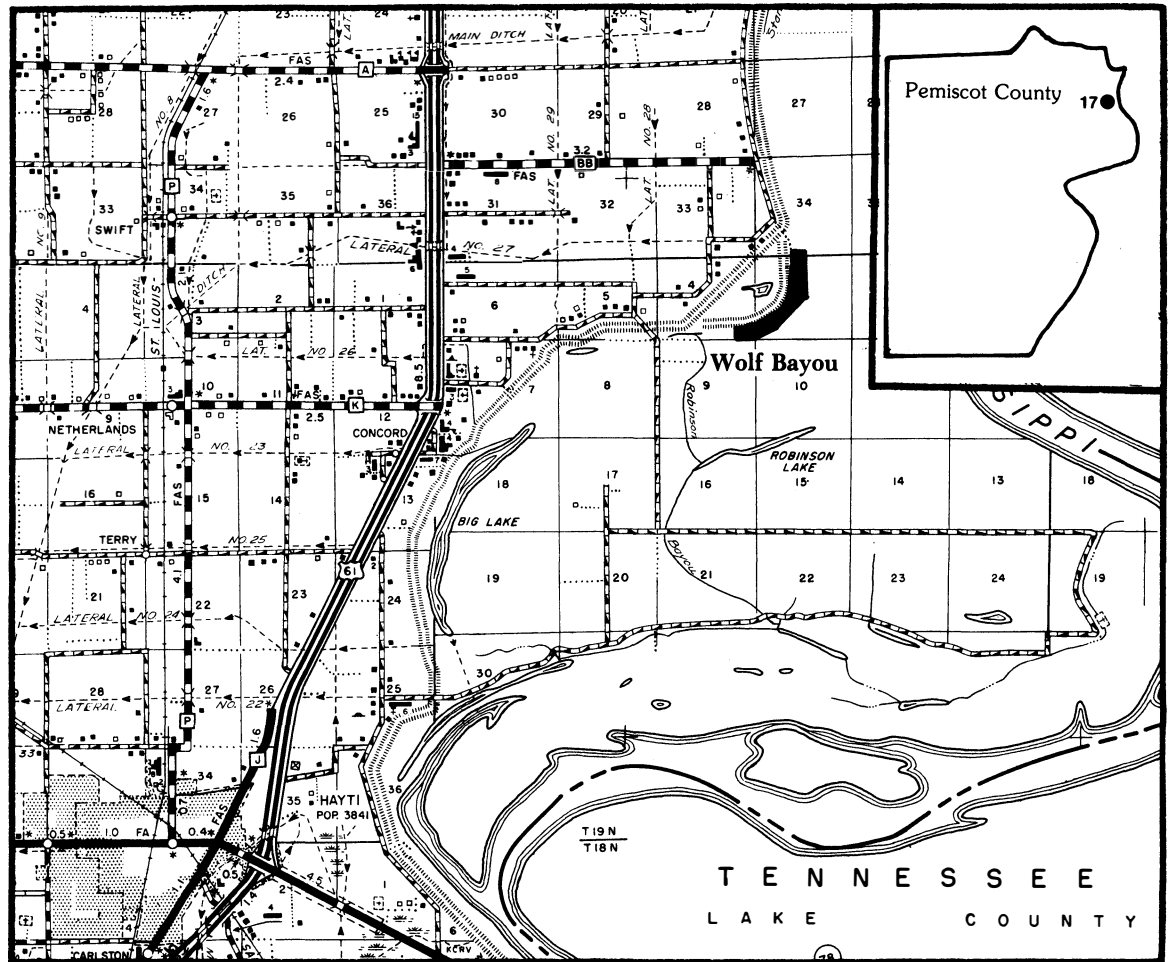
A 40-acre area in the Mark Twain National Forest, about ten miles south of Ava in Sec. 4, T24N, R16W, Smallett 7.5 min. topographic map. Access requires walking about a quarter-mile from a gravel road. Designated December 19, 1983.

Natural Features—Dolomite glades on slopes facing west, north and east with plants and animals that are characteristic of the White River Hills Section of the Ozark Natural Division. Smoketree (*Cotinus obovatus*) has flower stalks that look like puffs of smoke in the spring. Eastern collared lizards and Bachman's sparrows also use the area. Hayden Bald is owned by the U.S. Forest Service and registered with the Department of Conservation. This area is also registered into the Society of American Forester's natural area system. For further information contact the District Ranger, Ava Ranger District, P.O. Box 188, Ava, Missouri 65608, phone 417/683-4428.



Bachman's sparrow

JAMES D. WILSON



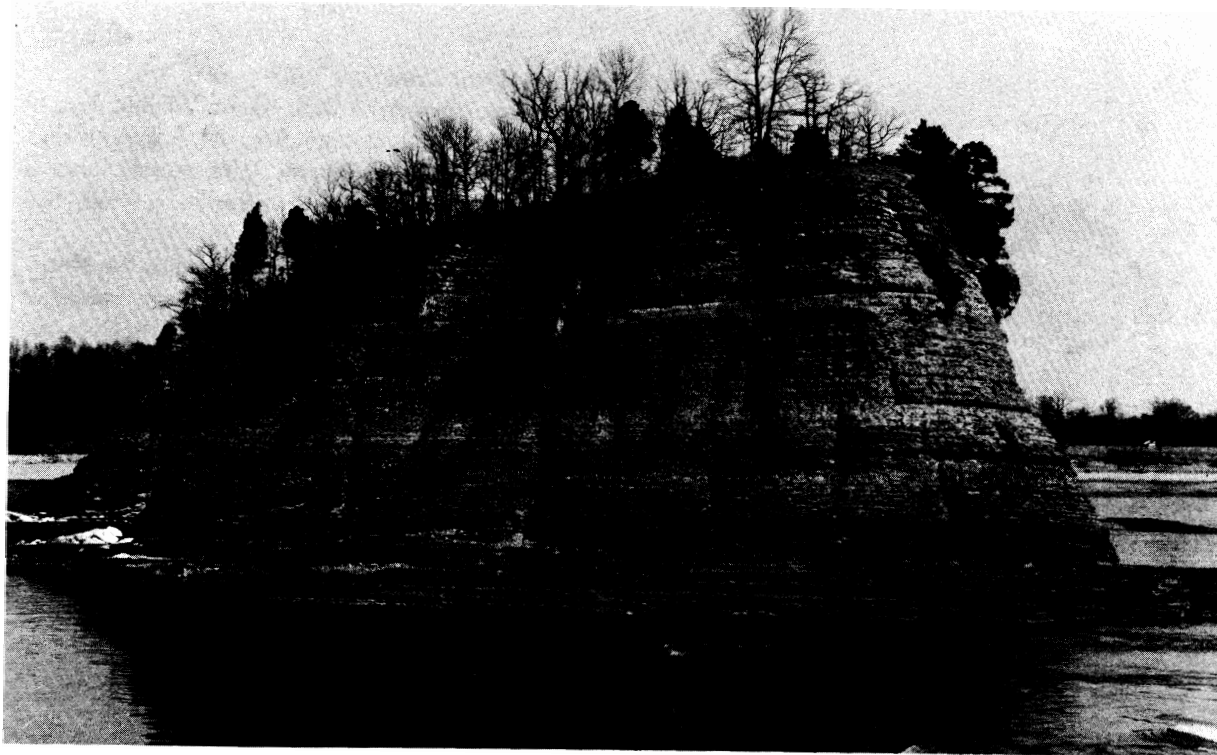
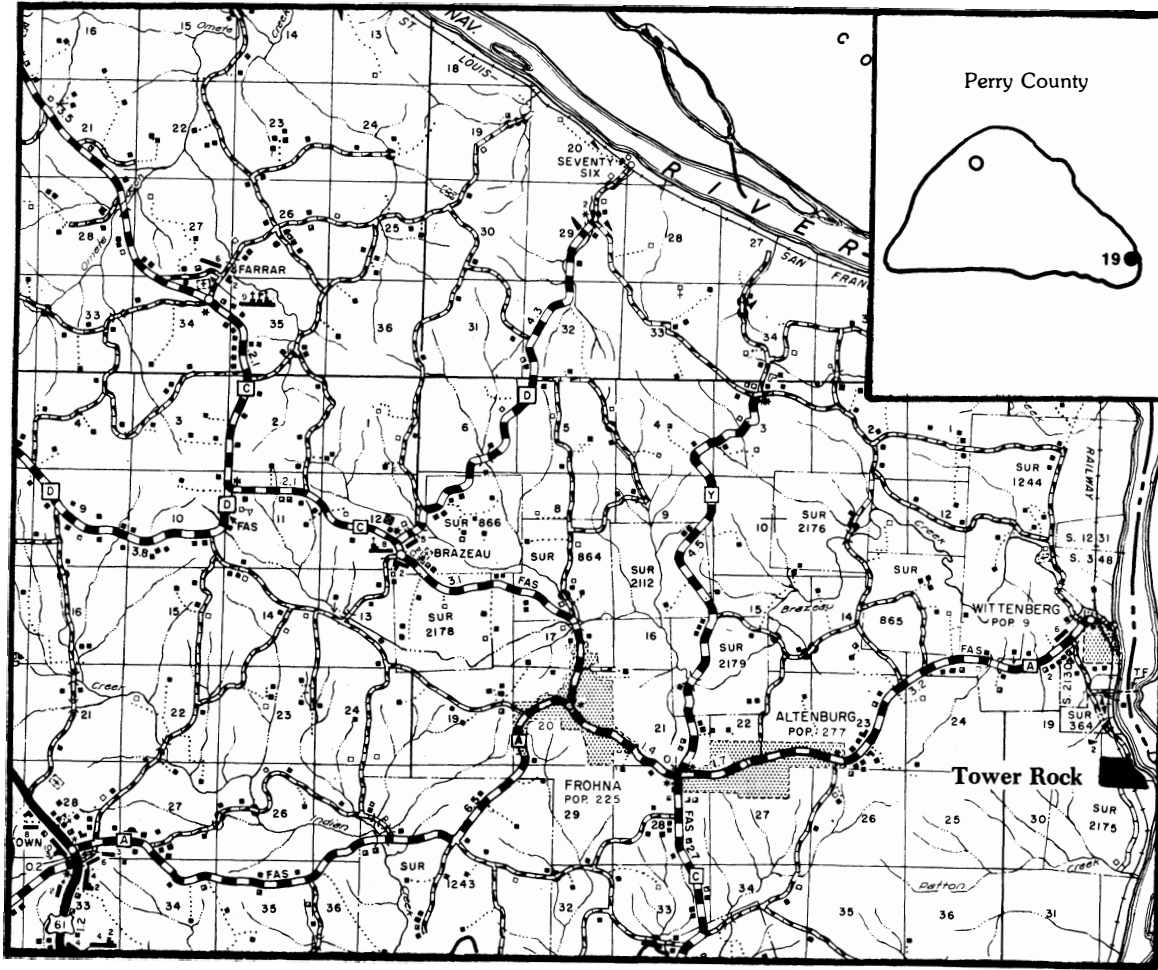
Mississippi kite

JAMES D. WILSON

Wolf Bayou Natural Area

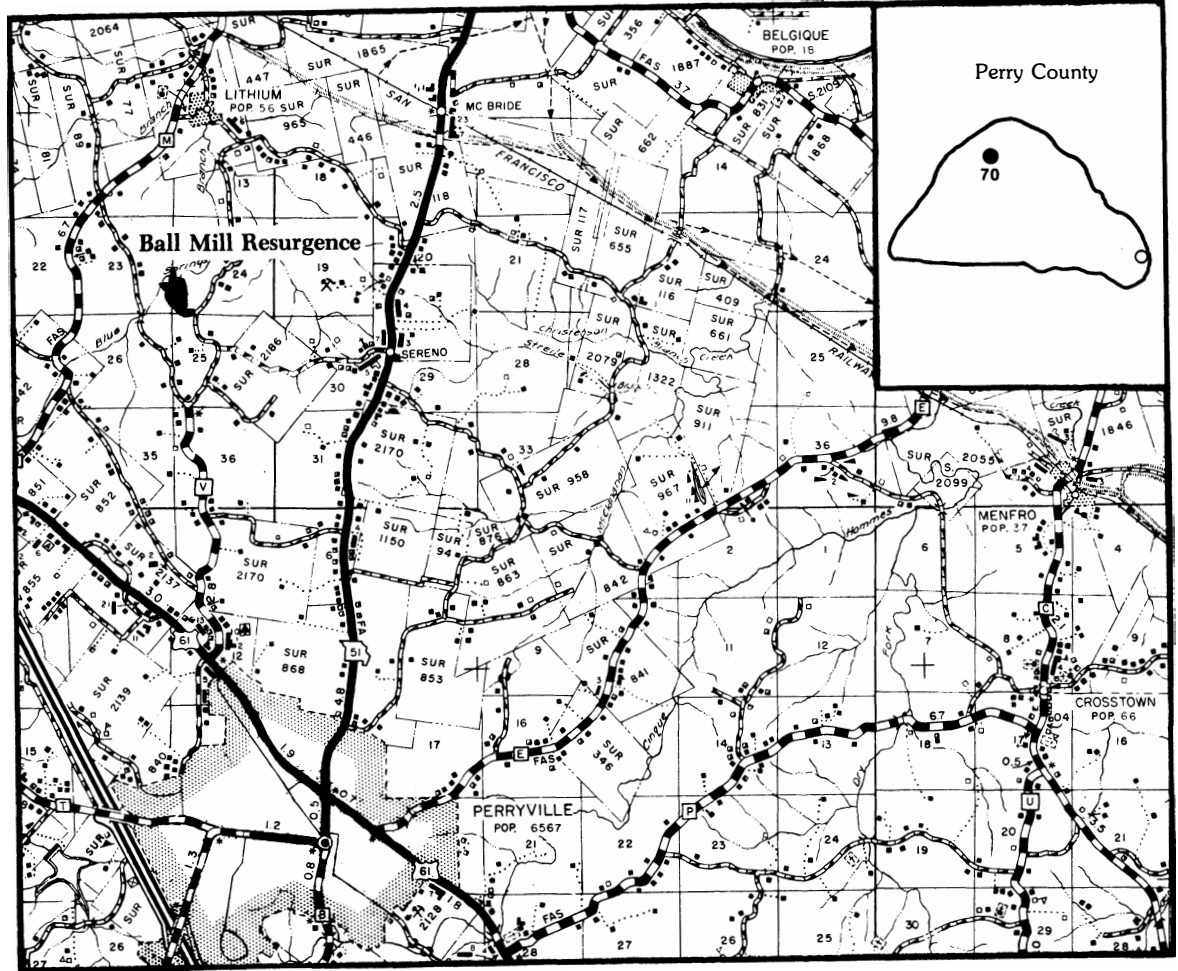
A 200-acre portion of the Wolf Bayou Wildlife Area in Sec. 3 and 4, T19N, R13E, and Sec. 34, T20N, R13E, Stanley 7.5 min. topographic map. This aquatic area is located about nine miles southeast of Portageville off Hwy BB. Designated June 27, 1972.

Natural Features—An oxbow lake carved by the Mississippi River, an adjoining cypress forest and small areas of bottomland forest with associated plants and animals in the Lower Mississippi River Section of the Big Rivers Natural Division. The area is owned by the Department of Conservation. For further information contact the District Fisheries Management Biologist, Missouri Department of Conservation, 833 N. Kingshighway, Cape Girardeau, Missouri 63701, phone 314/335-3109.



Tower Rock

RAMON D. CASS



Tower Rock Natural Area

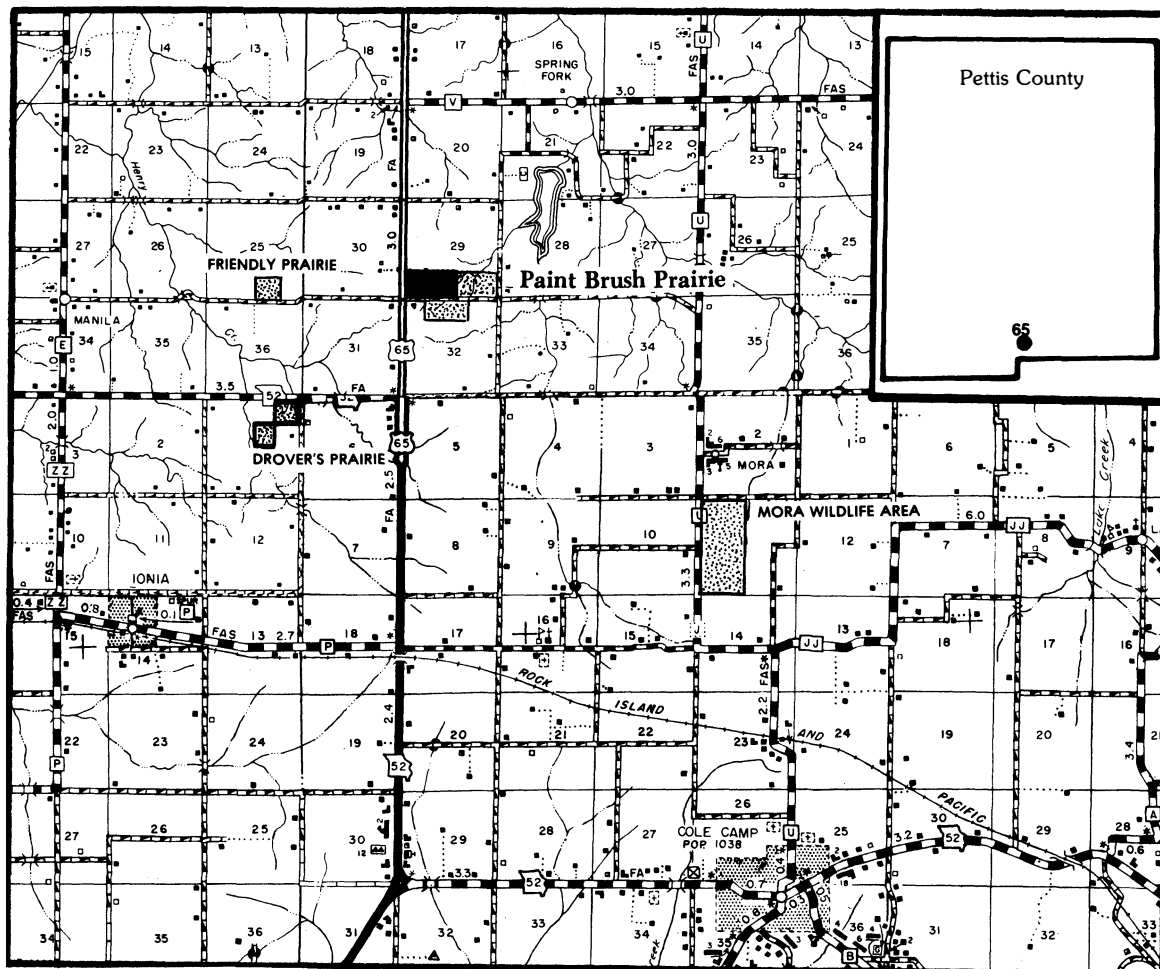
A 32-acre portion of Tower Rock State Forest located 1½ miles south of Wittenberg in Sec. 20, T34N, R14E, Altenburg 7.5 min. topographic map. Designated November 15, 1972.

Natural Features—Upland forest with stands of oak-pine and oak-hickory-beech, and a small natural limestone tower in the Mississippi River Section of the Ozark Border Natural Division. The natural area offers a view of Tower Rock. This designated National Historic Site is a small limestone island carved by the Mississippi River. The area is owned by the Department of Conservation. For further information contact the District Forester, Perryville Forest District, Box 152 (West Hwy T), Perryville, Missouri 63775, phone 314/547-4537.

Ball Mill Resurgence Natural Area

A 19-acre area about six miles north of Perryville in Sec. 23 and SW¼ Sec. 24, T36N, R10E, Lithium topographic map. Access is by foot from a county-maintained road off Hwy V. Designated August 23, 1979.

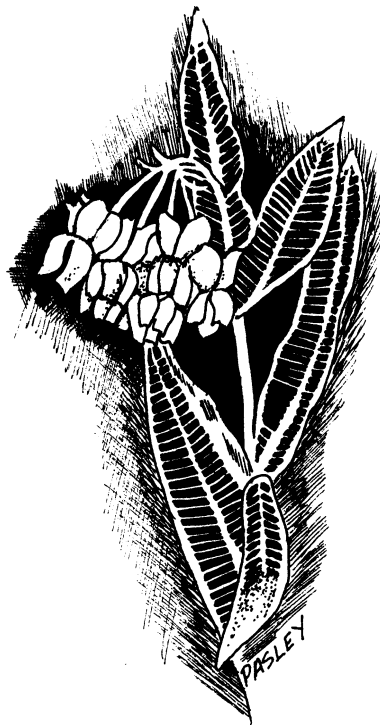
Natural Features—This geological natural area contains a sinkhole that normally acts as a water drain, but backs up as a spring after heavy rains. The resurgence acts as a natural rock tumbler which smooths and rounds angular rock fragments that fall into it. The area is forested and also contains several small, dry sinkholes. It is in the Mississippi River Section of the Ozark Border Natural Division. Ball Mill Resurgence is owned by the L-A-D Foundation and managed by the Department of Conservation. Collecting of geological specimens is prohibited. For further information contact the District Forester, Perryville Forest District, Box 152 (West Hwy T), Perryville, Missouri 63775, phone 314/547-4537.



Paint Brush Prairie Natural Area

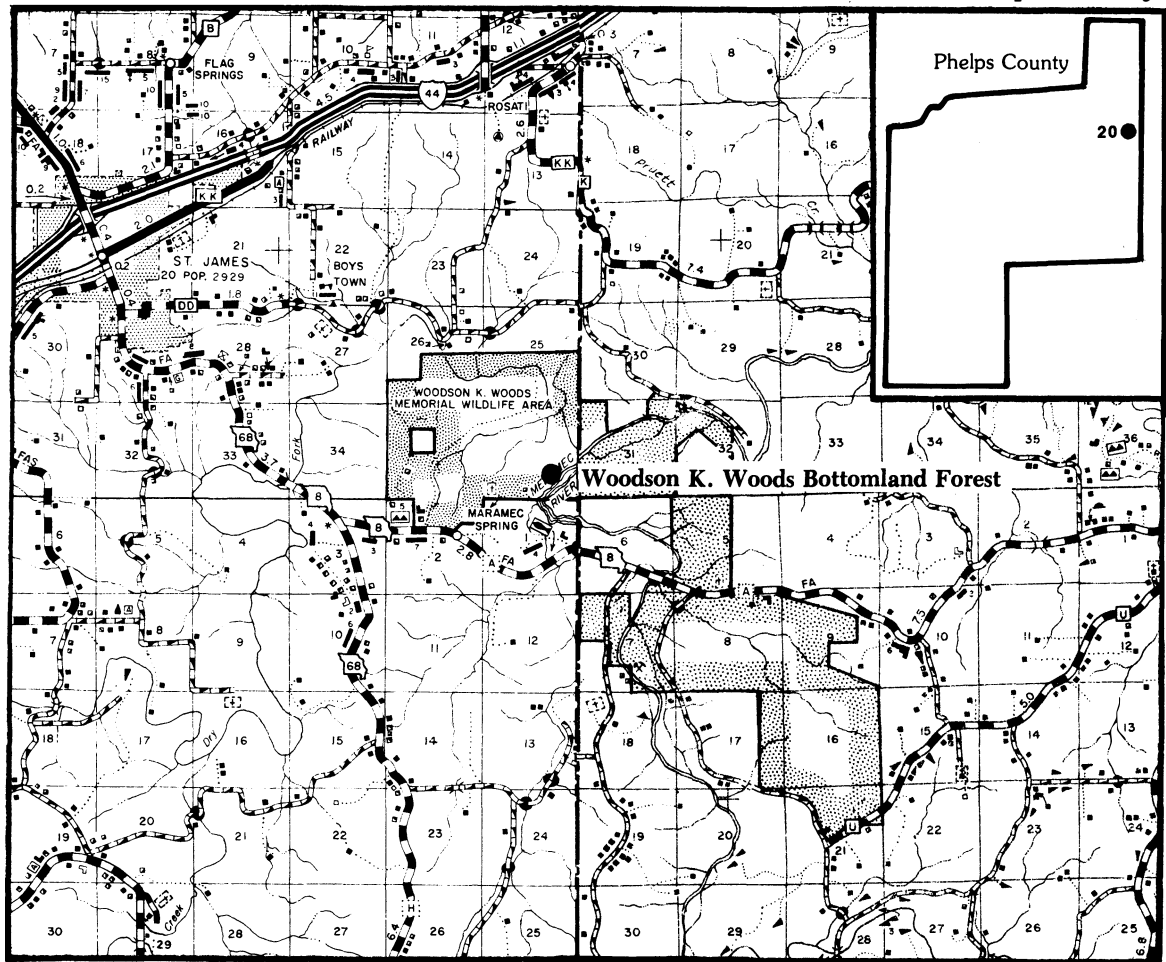
A 74-acre area about ten miles south of Sedalia on U.S. Hwy 65 in the S $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 29, T44N, R21W, Ionia 7.5 min. topographic map. Designated October 5, 1978.

Natural Features—A scenic upland prairie with a variety of grasses and wildflowers, including the endangered Mead's milkweed, prairie animals and small wooded, intermittent streams in the Osage Plains Natural Division. Paint Brush Prairie is owned by the Department of Conservation. Management consists of alternating treatments of haying, resting and burning the prairie. An informational brochure is available for this area. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



Mead's milkweed (Asclepias meadii)

DONNA PASLEY



Woodson K. Woods Bottomland Forest Natural Area

A 15-acre portion of the Woodson K. Woods Wildlife Area about six miles southeast of St. James in Sec. 36, T38N, R6W, Maramec Spring 7.5 min. topographic map. Access is by foot from a parking lot, by foot from Maramec Spring Park, or by boat from the Meramec River. Designated November 15, 1972.

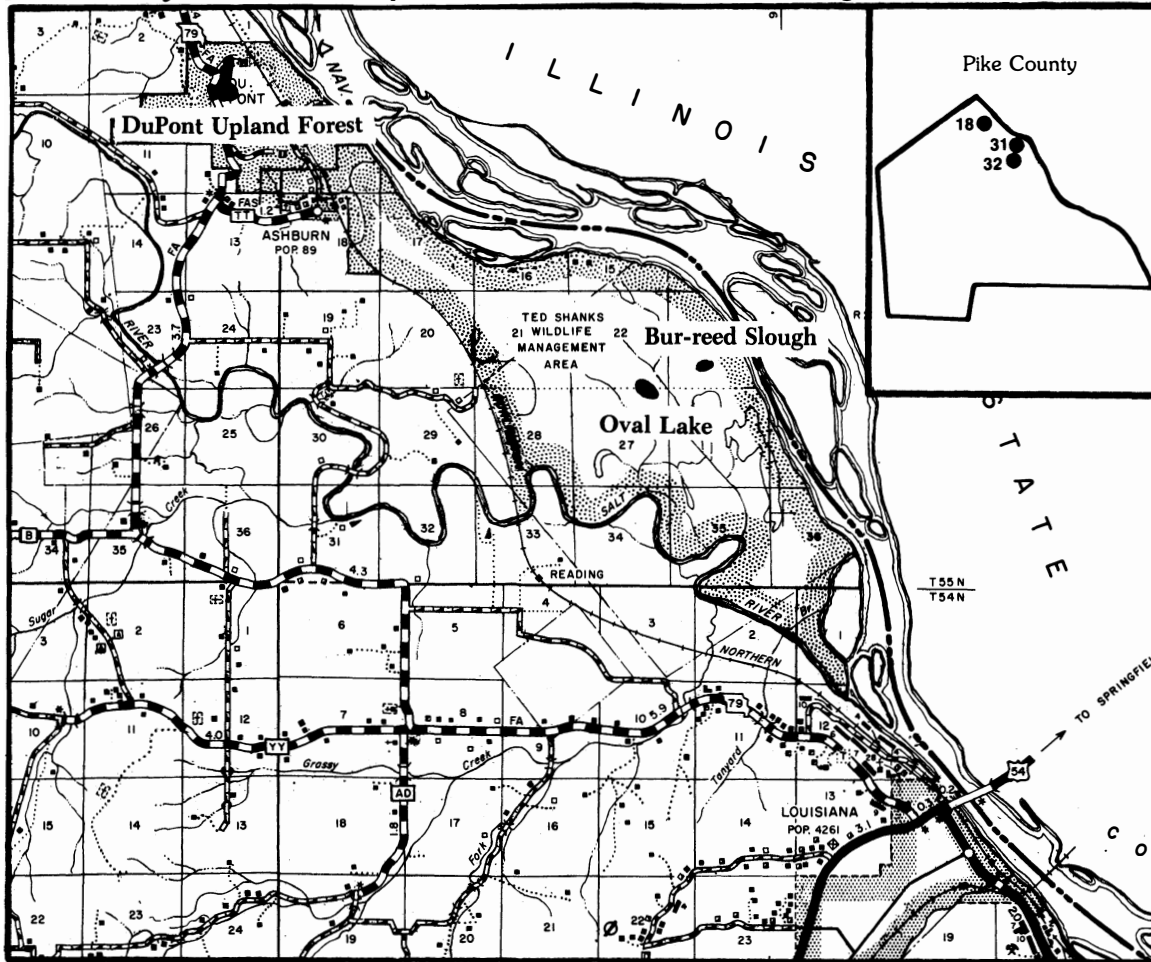
Natural Features—An old growth bottomland forest with many species sharing dominance in the canopy. A backwater slough and frontage on the Meramec River in the

Upper Ozark Section of the Ozark Natural Division are also features. Some of the trees found are bur, white and northern red oak, sycamore, bitternut hickory, persimmon, river birch and butternut. The area is owned by the Department of Conservation. For further information contact the Fisheries Area Manager, Woodson K. Woods Memorial Wildlife Area, Box 414, St. James, Missouri 65559, Phone 314/265-7801.



Meramec River at Woodson K. Woods Natural Area

RICHARD THOM



DuPont Upland Forest Natural Area

An 80-acre tract on the east side of Hwy 79 about 18 miles south of Hannibal and 15 miles north of Louisiana in Sec. 1 and 12, T55N, R3W, Ashburn 7.5 min. topographic map. Access is from a scenic overlook off Hwy 79. Designated November 15, 1972.

Natural Features—A mixed, upland hardwood forest and small limestone glade along the Mississippi River, with rich spring flora and spectacular fall color in the Lincoln Hills Section of the Glaciated Plains Natural Division. Basswood,

northern red, white and chinquapin oak, and sugar maple are common overstory trees. An informational brochure is available for this natural area. DuPont Upland Forest is owned by the Department of Conservation and managed as a part of the Ted Shanks Wildlife Management Area. For further information contact the Area Manager, Ted Shanks Wildlife Management Area, Box 13, Ashburn, Missouri 63433, phone 314/754-6171.

Bur-reed Slough Natural Area

A 20-acre portion of the Ted Shanks Wildlife Management Area near Ashburn off Hwy TT in Sec. 23, T55N, R2W, Ashburn 7.5 min. topographic map. For specific directions, inquire at the Wildlife Area main office. Designated September 25, 1974.

Natural Features—A small natural marsh in the Upper Mississippi Section of the Big Rivers Natural Division with giant bur-reed (*Sparganium eurycarpum*), great bulrush

(*Scirpus validus*) and associated marsh plants. The marsh is used by a variety of birds, including American and least bitterns, great blue herons and sora rails. The wildlife area is owned by the Department of Conservation. For further information contact the Area Manager, Ted Shanks Wildlife Management Area, Box 13, Ashburn, Missouri 63433, phone 314/754-6171.

Oval Lake Natural Area

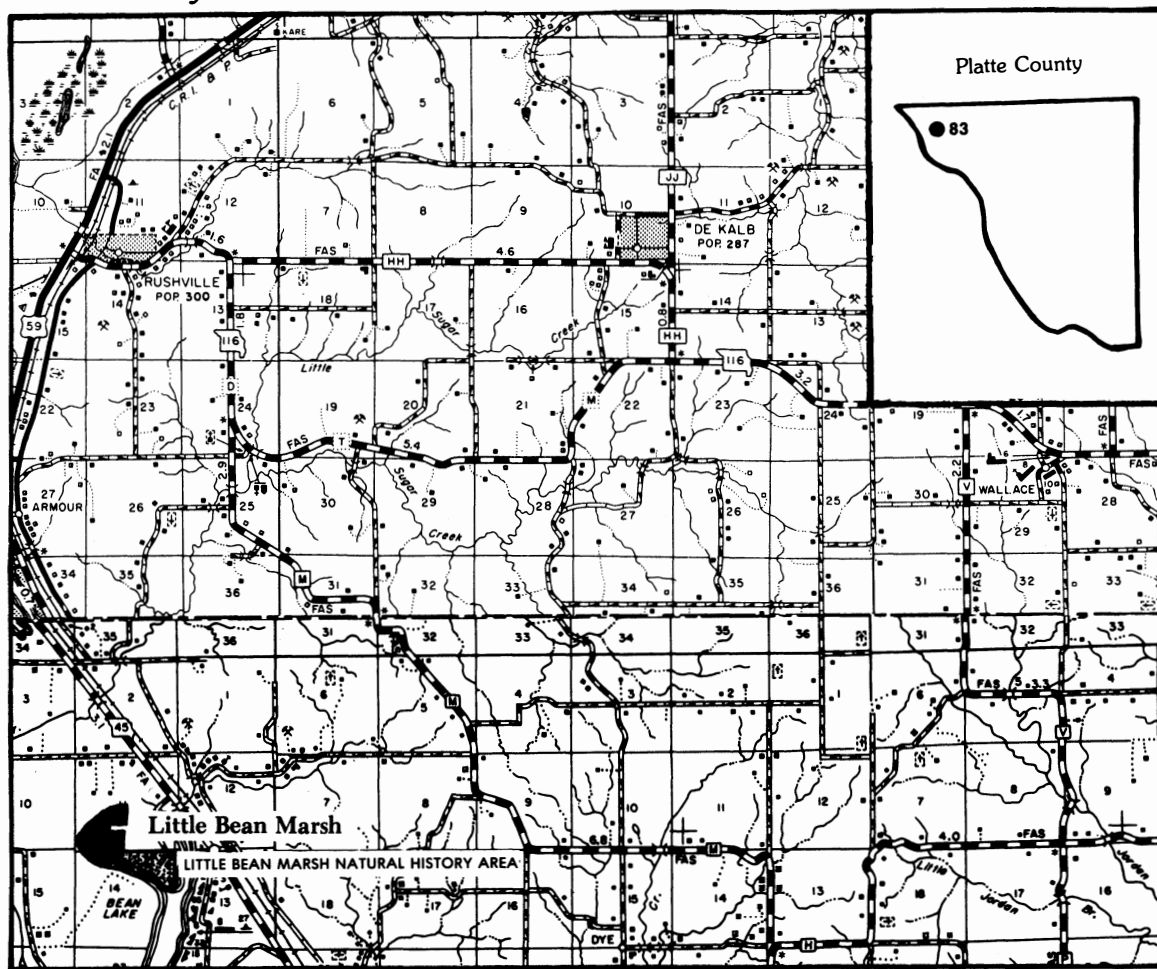
A 20-acre portion of the Ted Shanks Wildlife Management Area in Sec. 22 and 27, T55N, R2W, Ashburn 7.5 min. topographic map. For access inquire at the wildlife area headquarters near Ashburn. Designated September 25, 1974.

Natural Features—A natural five-acre floodplain pond, unchanged since the 1816 Government Land Office Plats, which is located in the Upper Mississippi River Section of the

Big Rivers Natural Division. An interesting plant community of river bulrush (*Scirpus fluviatilis*) and associated plants, and typical marsh wildlife such as muskrats and waterfowl are found there. Marsh and bottomland forest surround the pond. The area is owned by the Department of Conservation. For further information contact the Area Manager, Ted Shanks Wildlife Management Area, Box 13, Ashburn, Missouri 63433, phone 314/754-6171.



DON WOOLDRIDGE



Little Bean Marsh Natural Area

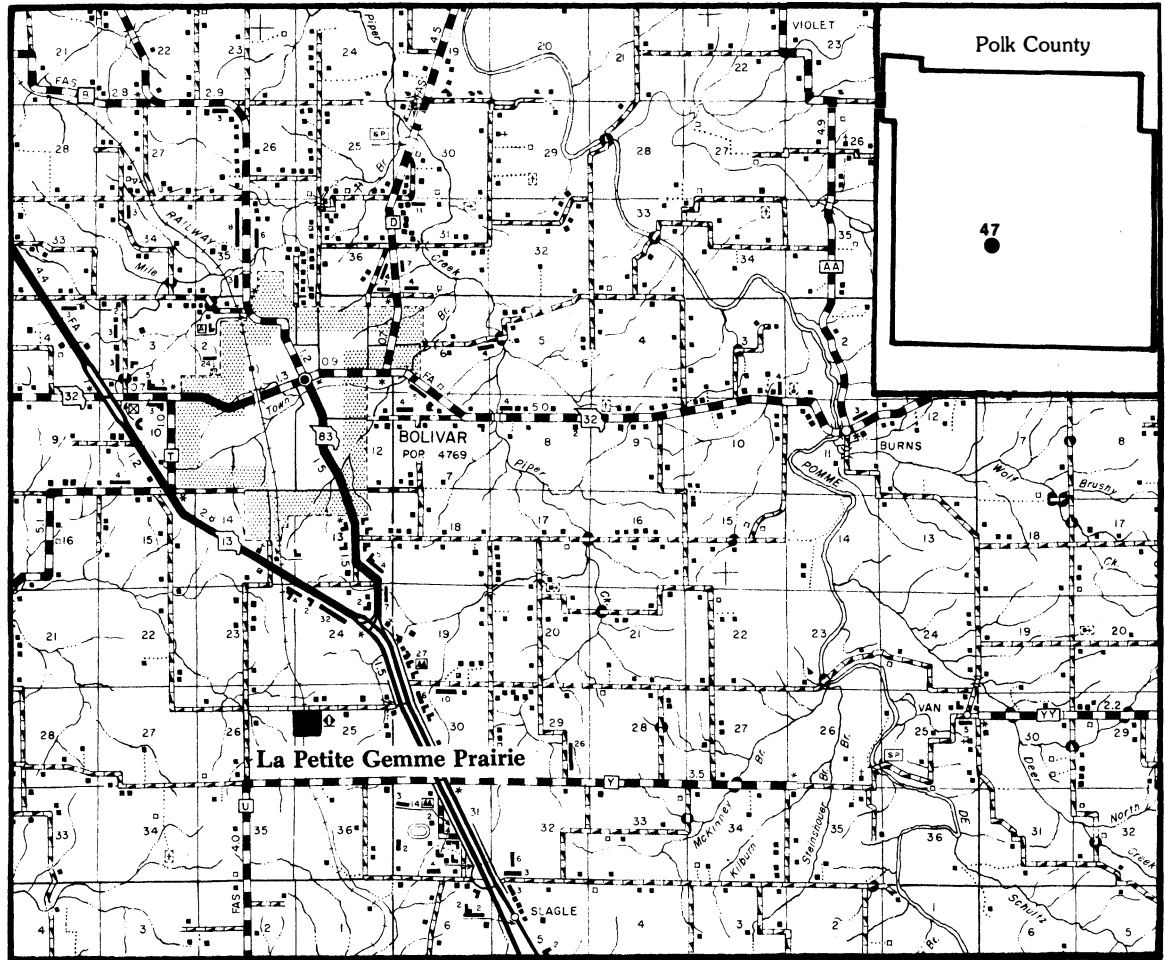
A 151-acre portion of the 248-acre Little Bean Marsh Natural History Area between Kansas City and St. Joseph off Hwy 45 in Sec. 11 and 14, T54N, R37W, Atchison East and Oak Mills 7.5 min. topographic maps. Designated February 3, 1981.

Natural Features—The best natural marsh along the Missouri River with a slough and bottomland forest in the old Missouri floodplain. It is in the Upper Missouri River Section of the Big Rivers Natural Division. The area is a wintering site for bald eagles and several kinds of hawks. Waterfowl and other marsh birds visit the area during migration, and it provides breeding habitat for a variety of marsh wildlife. An informational brochure is available. The area is owned by the Department of Conservation. The collecting of plants and animals is prohibited. Area regulations are posted at the parking lot of this Natural History Area. For further information contact the Wildlife District Supervisor, 3408 Ashland, St. Joseph, Missouri 64506, phone 816/233-3212.



American bittern

JAMES D. WILSON



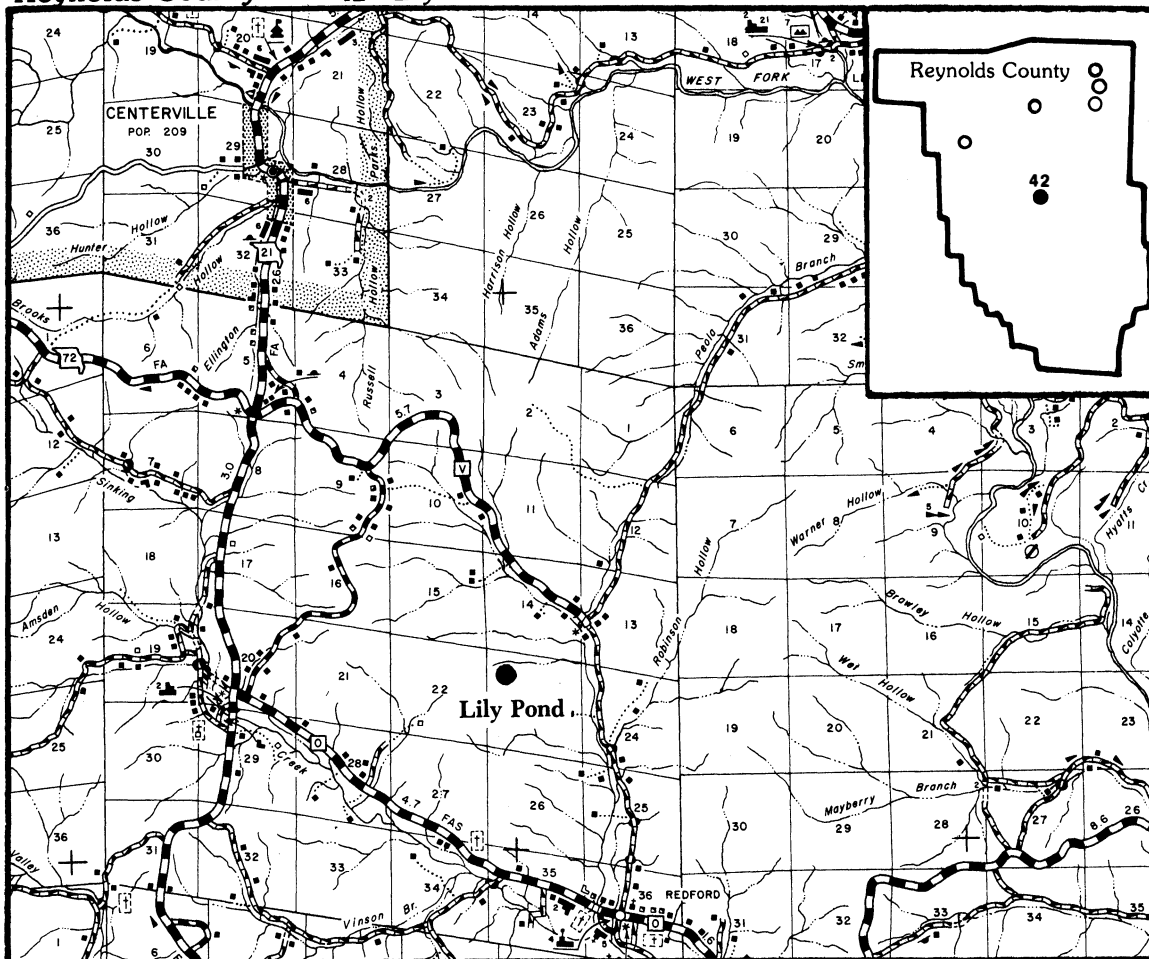
GARY REESE

La Petite Gemme Prairie Natural Area

A 37-acre area located two miles south and one mile west of Bolivar on a gravel road off of U.S. Hwy 13, in SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 25, T33N, R23W, Bolivar 7.5 min. topographic map. Designated June 21, 1977.

Natural Features—A scenic upland prairie on soils derived from shale and limestone in the Springfield Plateau Section of the Ozark Natural Division. Soils are Parsons silt loam, Summit silty clay loam and Liberal silt loam. The name is French for “the little gem” and recognizes the French influence on Missouri as well as the gemlike quality of the prairie wildflowers. An informational brochure is available on this natural area. This prairie is owned by the Missouri Prairie Foundation and managed by the Department of Conservation. Camping, fires and collecting of plants and animals are prohibited. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.

Gayfeather (*Liatris pycnostachya*)



Lily Pond Natural Area

An eight-acre area southeast of Centerville and north of Sinking Creek in Sec. 23, T31N, R1E, Redford 7.5 min. topographic map. Access is by foot over private land and the trail is long and obscure. A topographic map and knowledge of its use are required to visit this area. Designated December 15, 1975.

Natural Features—A small, boggy sinkhole pond in the Lower Ozark Section of the Ozark Natural Division. Unusual plants including the state-endangered swamp loosestrife (*Decodon verticillatus*) and a pondweed (*Potamogeton*

epiphydus) are found here. It also contains typical swamp vegetation such as swamp rose (*Rosa palustris*), hibiscus (*Hibiscus lasiocarpus*) and buttonbush (*Cephalanthus occidentalis*). The pond is surrounded by pine-oak forest on sandy soil. Lily Pond is owned by The Nature Conservancy and managed by the Department of Conservation. For further information contact the District Forester, Clearwater Forest District, Route 1, Box 1 (Hwy 34), Piedmont, Missouri 63957, phone 314/223-4525.

Johnson's Shut-Ins Natural Area

A 180-acre area in Johnson's Shut-Ins State Park, parts of Sec. 16 and 21, T33N, R2E, Johnson's Shut-Ins 7.5 min. topographic map. Designated June 5, 1978.

Natural Features—At Johnson's Shut-Ins, the East Fork Black River encounters Precambrian-age volcanic rocks. The valley walls converge dramatically and the stream plunges over a series of enclosed rapids called "shut-ins." Igneous rocks exposed along the river tell a fascinating story of violent volcanic eruptions that occurred more than a billion years ago in this St. Francois Mountain Section of the

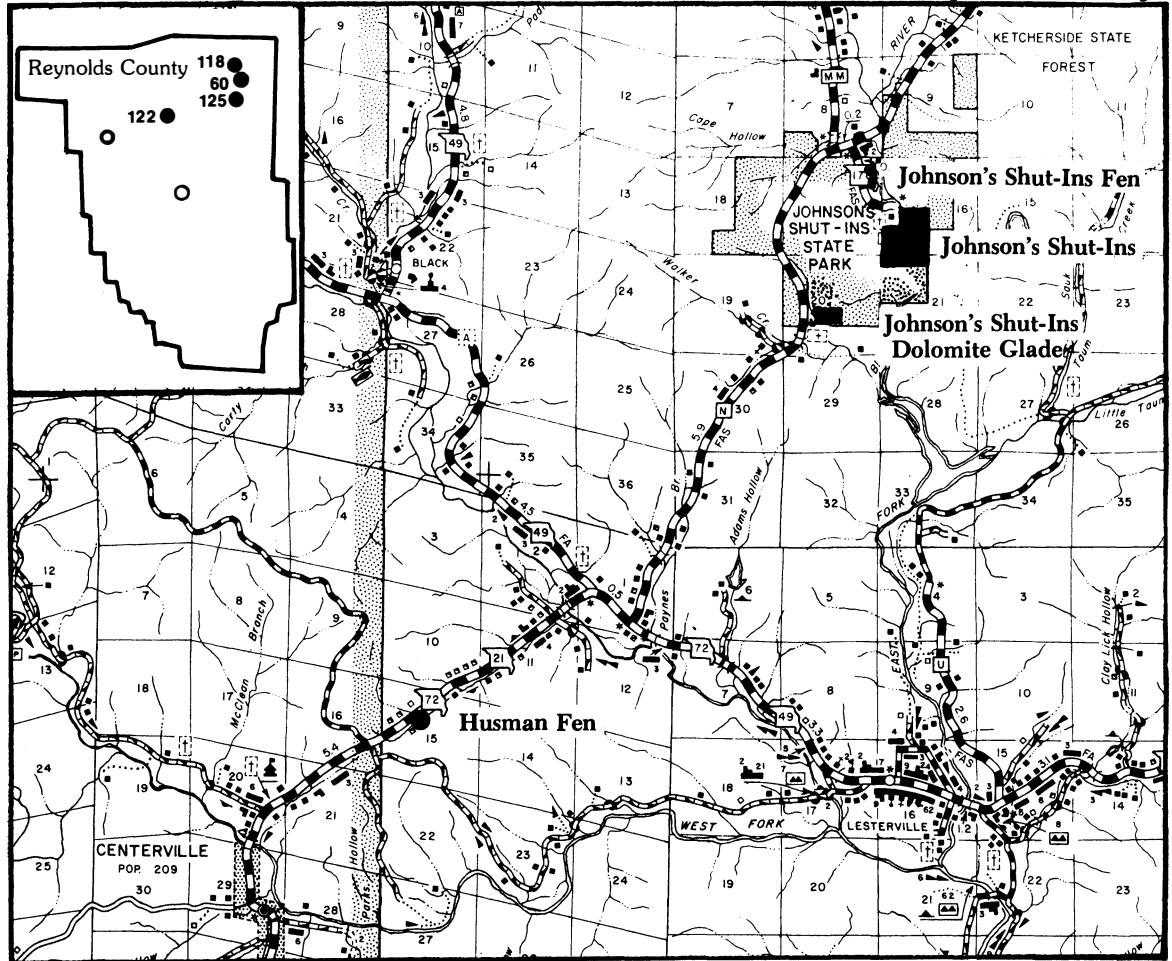
Johnson's Shut-Ins Fen Natural Area

An eight-acre part of Johnson's Shut-Ins State Park, in Sec. 17, T33N, R2E, Johnson's Shut-Ins 7.5 min. topographic map. Designated December 1, 1983.

Natural Features—Johnson's Shut-Ins Fen is a combination of a seep forest and calcareous fens in the St. Fran-

cois Mountain Section of the Ozark Natural Division. Johnson's Shut-Ins Natural Area also includes gravel bars along the river, dry igneous forest, igneous glades and extremely rugged igneous talus slope communities. A separate state park brochure interprets the geologic and natural history of this area. Johnson's Shut-Ins State Park is owned by the Department of Natural Resources. For further information contact the Superintendent, Johnson's Shut-Ins State Park, Middlebrook, Missouri 63656, phone 314/546-2450.

cois Mountain Section of the Ozark Natural Division. The fen community is found within the floodplain of East Fork Black River. Seep forests are infrequently found in Missouri. Based on a comprehensive study of fens, this is the least-disturbed example known in the state. The dominant trees



are red maple, green ash, slippery elm and honey locust. Two rare plants are found here along with other notable wetland species including closed gentian, silky willow and an uncommon variety of southern blue flag iris. A combination of seasonally ponded rainwater and calcareous groundwater seepage on the level floodplain promotes this unusual

wetland community. Typically saturated, the soils can become dry during drought. The Department of Natural Resources owns this area. For further information contact the Superintendent, Johnson's Shut-Ins State Park, Middlebrook, Missouri 63656, phone 314/546-2450.

Husman Fen Natural Area

A one-acre area on private land in Sec. 15, T32N, R1E, Centerville topographic map. Access is from Hwy 72, and requires the owner's permission. Designated December 19, 1983.

Natural Features—A high-quality fen natural community in the Lower Ozark Section of the Ozark Natural Division.

Johnson's Shut-Ins Dolomite Glade Natural Area

An 18-acre portion of Johnson's Shut-Ins State Park, parts of Sec. 20, T33N, R2E, Johnson's Shut-Ins 7.5 min. topographic map. Designated October 1984.

Natural Features—A four-acre dolomite glade of the Davis rock formation located on a forested southwest-facing slope. This is the only dolomite glade represented from the St. Francois Mountain Section of the Ozark Natural Division. Dolomite glades are rare in the St. Francois Mountains. The glade was part of a floristic study conducted at

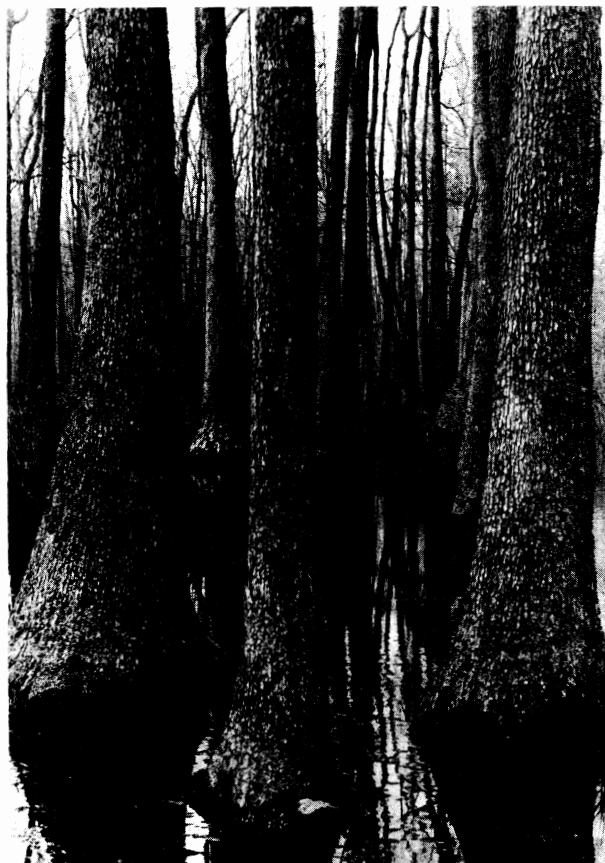
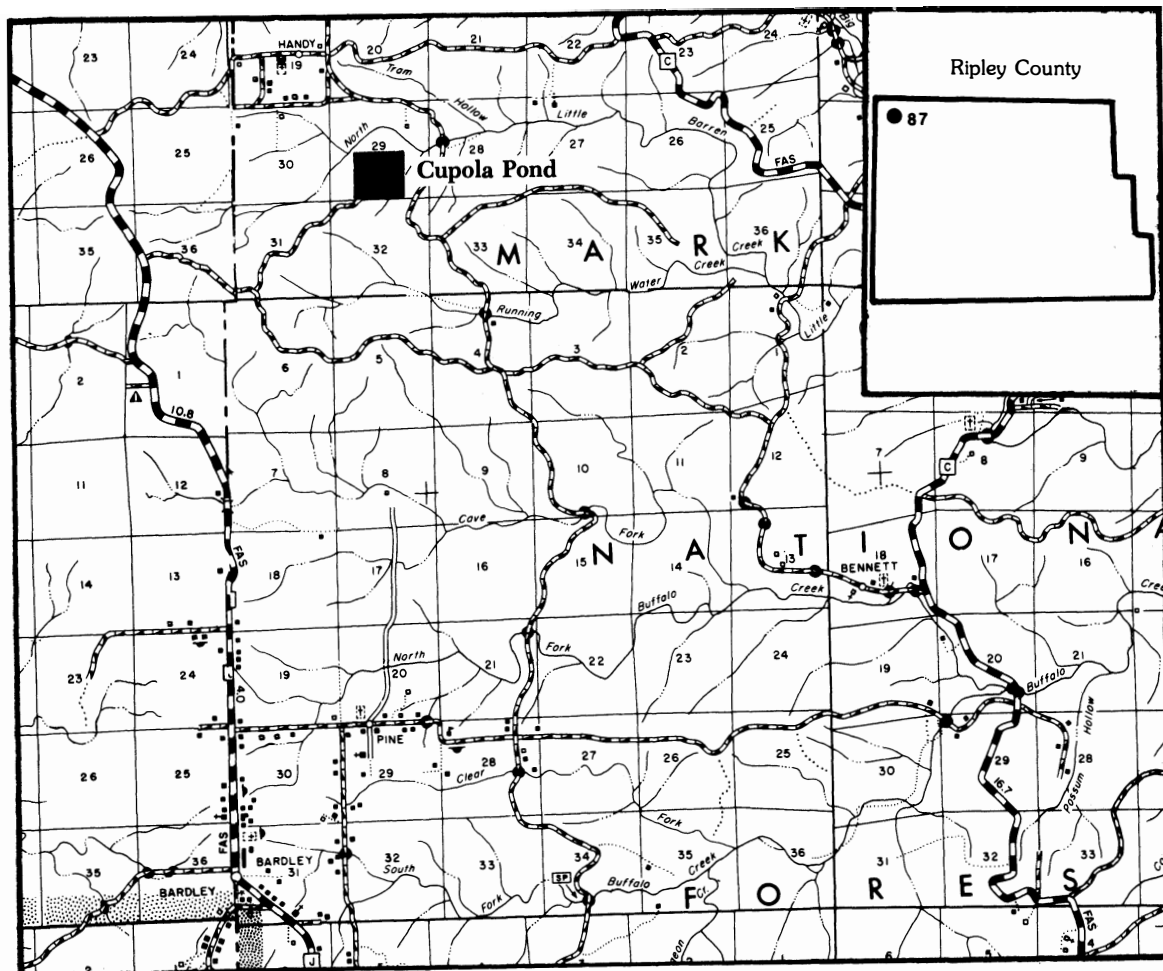
Fens are seepage areas with boggy soils and plants that are adapted to these conditions. The area is registered with the Department of Conservation and owned by Mr. Fred Husman. For permission to visit the natural area contact Mr. Fred Husman, 946 Sanders Drive, Crestwood, Missouri 63126, phone 314/962-8445.

Johnson's Shut-Ins State Park in 1977 by Paul Nelson. Several plants noted only on the glade, which contributed to the park's over 900 plant species, include Missouri evening primrose, adder's tongue fern and sandwort. The area is owned by the Department of Natural Resources. For further information contact the Superintendent, Johnson's Shut-Ins State Park, Middlebrook, Missouri 63656, phone 314/546-2450.

Natural Features—A high-quality prairie fen with associated vegetation and rare plants in the Lower Ozark Section of the Ozark Natural Division. Fens are boggy areas with saturated soils caused by seepage. Grasshopper Hollow is owned by the St. Joe Mineral Corporation and registered with the Department of Conservation. For permission to visit the area contact the Division Superintendent, Fletcher Division, P.O. Box 500, Viburnum, Missouri 65566, phone 314/689-2251.



JAMES D. WILSON



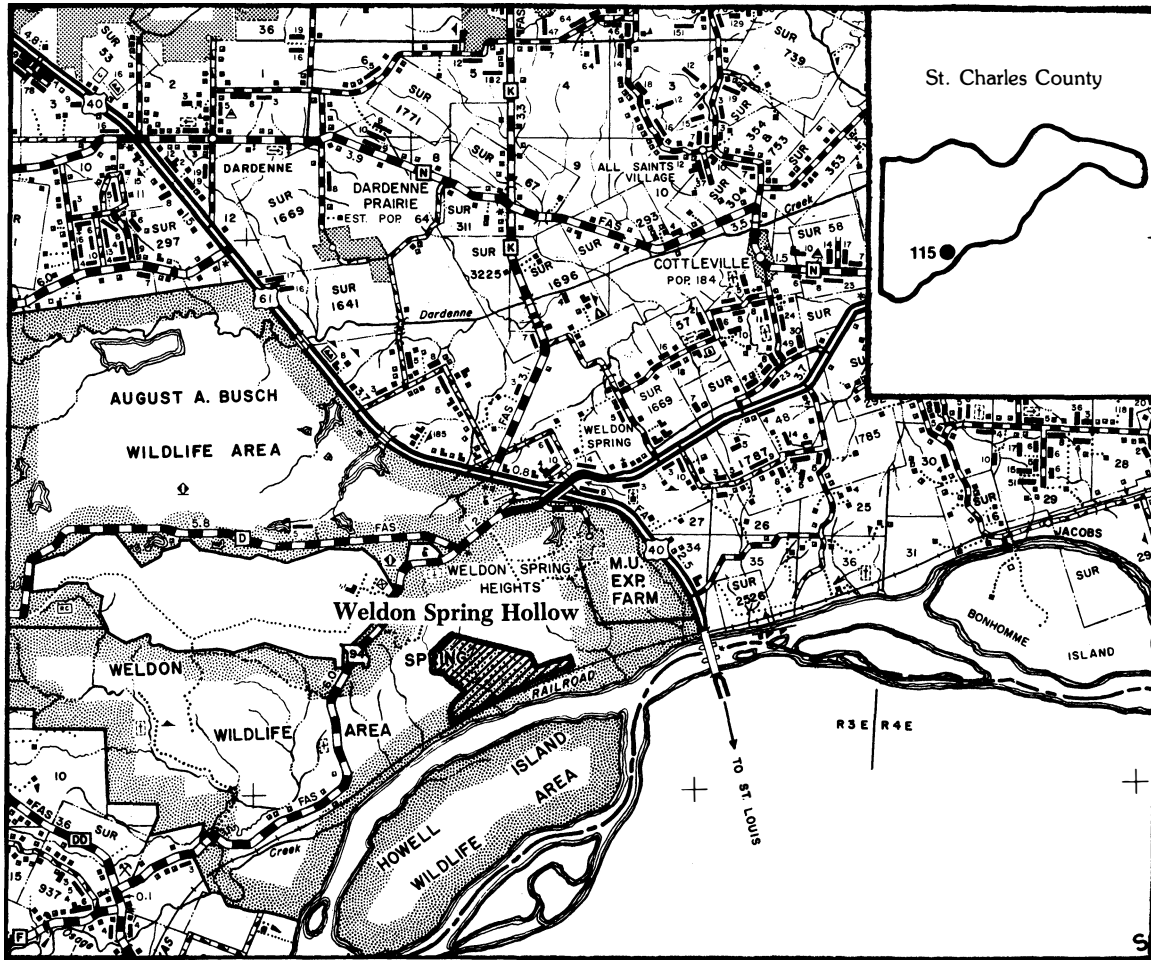
PAUL NELSON

Cupola Pond Natural Area

A 160-acre portion of Mark Twain National Forest in Sec. 29, T25N, R1W, Handy 7.5 min. topographic map. Access is by Forest Service Road 4822 from the southwest. Designated February 12, 1981.

Natural Features—An ancient sinkhole pond ringed with tupelo gum trees and surrounded by an Ozark upland forest in the Lower Ozark Section of the Ozark Natural Division. Cupola Pond is owned and managed by the U.S. Forest Service and is registered with the Department of Conservation. It is also a registered National Natural Landmark. For further information contact the District Ranger, Doniphan Ranger District, USDA-Forest Service, Doniphan, Missouri 63935, phone 314/996-2153.

Sinkhole pond swamp at Cupola Pond Natural Area



Weldon Spring Hollow Natural Area

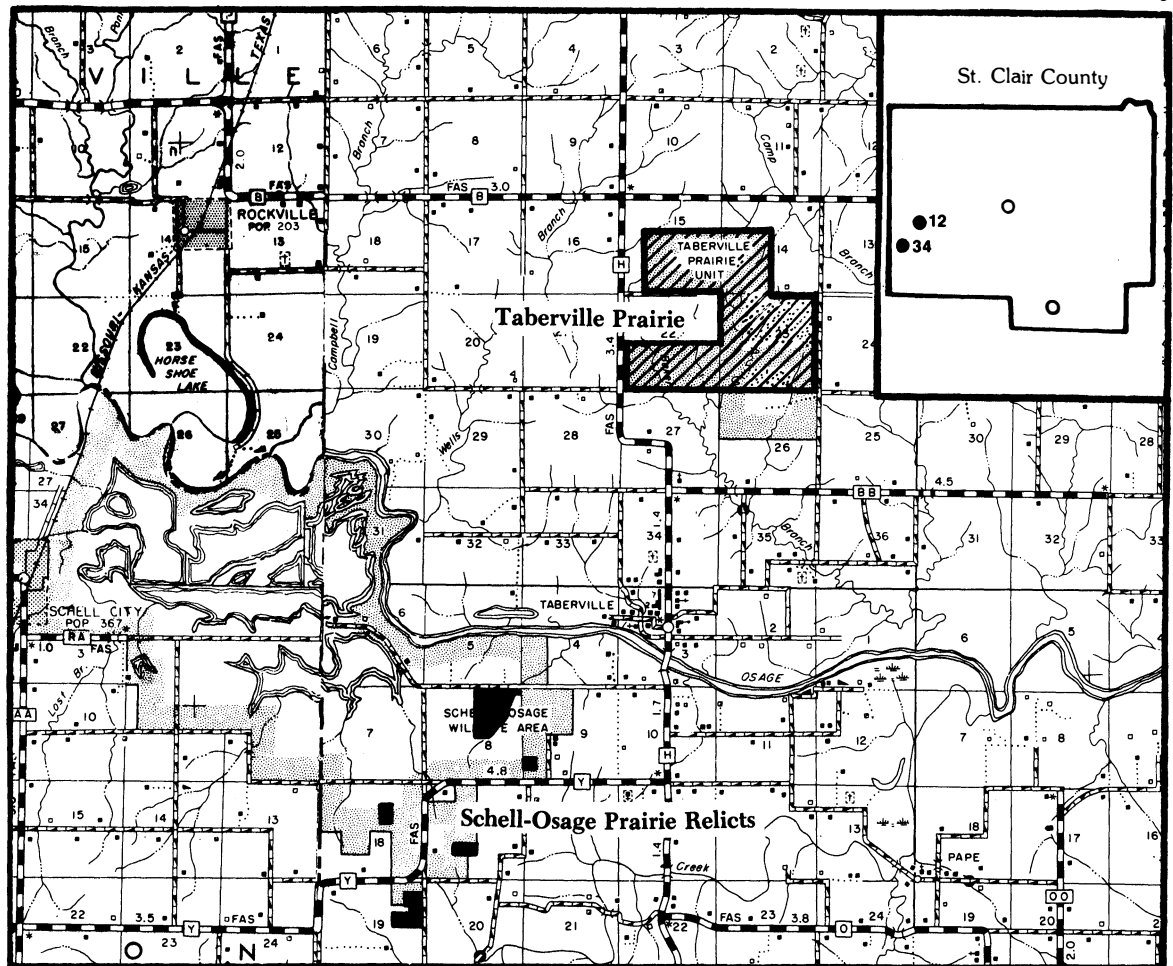
A 385-acre portion of the Weldon Spring Wildlife Area in Sections 4 and 5, T45N, R3E, Weldon Spring 7.5 min. topographic map. Access is by foot from Hwy 94 or the Missouri River. A hiking trail crosses the area. Designated June 20, 1983.

Natural Features—Scenic upland and bottomland forests, high limestone cliffs, intermittent streams and rugged riverbreak topography in the Missouri River Section of the Ozark Border Natural Division. Soils are primarily Goss cherty silt loam and Menfro silt loam. There are many species of trees and wildflowers, as well as characteristic forest wildlife. The cliffs are used as nesting sites for Canada geese. The area is owned by the Department of Conservation. Camping and fires are not permitted on the area. For further information contact the Wildlife Area Manager, August A. Busch Wildlife Area, Route 2, Box 223, St. Charles, Missouri 63301, phone 314/447-0010.



Cliff-nesting Canada geese

JAMES D. WILSON



Taberville Prairie Natural Area

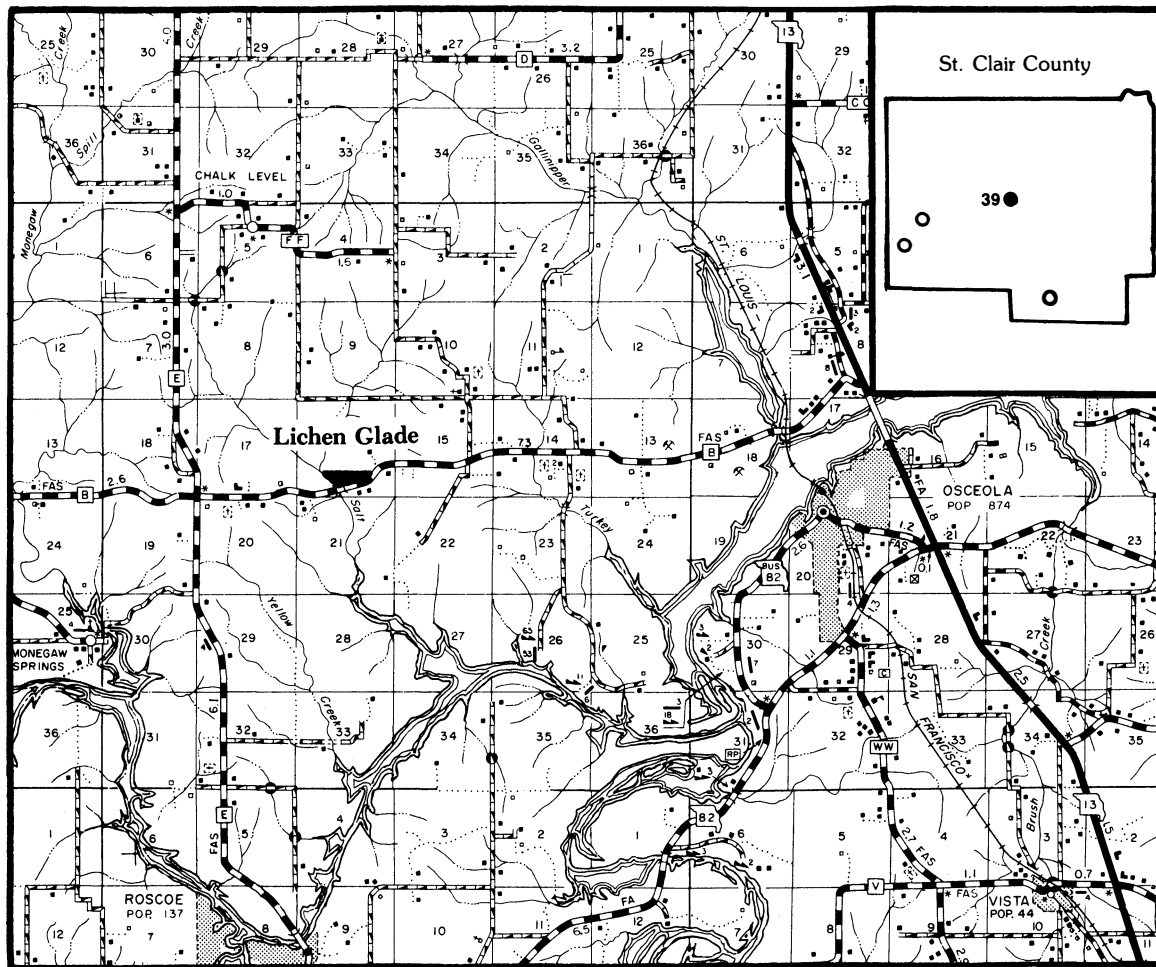
A 1,360-acre prairie 2½ miles north of Taberville on Hwy H in Sec. 14, 15, 22, and 23, T38N, R28W, Taberville 7.5 min. topographic map. Designated December 20, 1971.

Natural Features—Missouri's largest prairie natural area, this registered National Natural Landmark features upland prairie, sandstone outcrops, prairie mounds and a prairie headwaters stream in the Osage Plains Natural Division. Wildlife is abundant, and one of the largest prairie chicken populations in Missouri occurs here. Many prairie wildflowers and native tallgrasses create a beautiful landscape. Soils vary from deep to shallow and are derived from sandstone and shale. Collinsville fine sandy loam, Barco fine sandy loam, Barden silt loam and Parsons silt loam are the predominant soils. Taberville Prairie is owned by the Department of Conservation. Management consists of alternately haying, burning, grazing and resting various portions of the prairie. For more information contact Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.

Schell-Osage Prairie Relicts Natural Area

The area consists of 41½ acres of prairie located within the Schell-Osage Wildlife Area west of Taberville on Hwy Y, Eldorado Springs North 7.5 min. topographic map. Some of these areas are difficult to find and require walk-in access. Others are along county roads. Designated April 17, 1975.

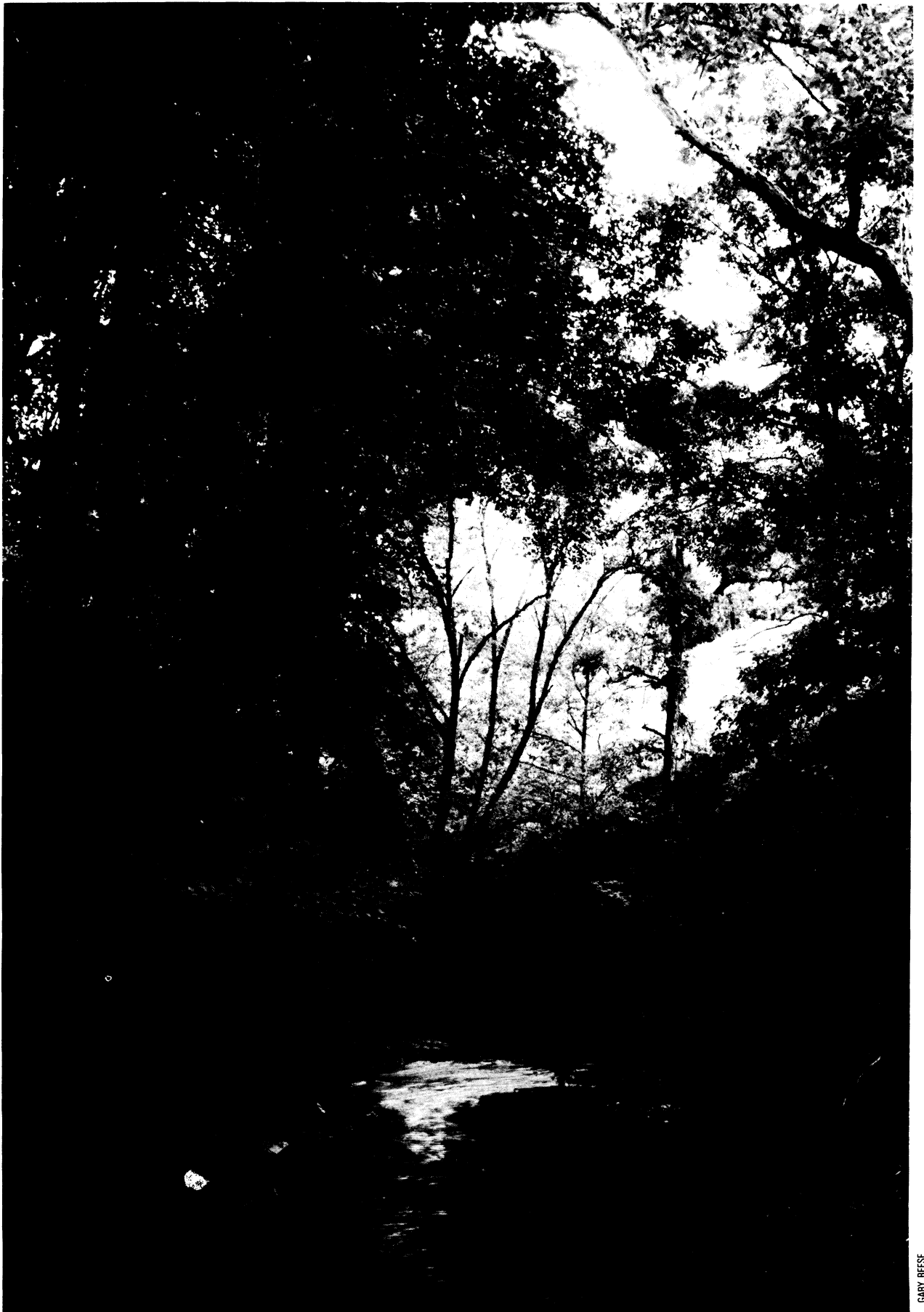
Natural Features—Five separate tracts, ranging from 3½ to 15 acres each, with a total of about 40 acres of high-quality prairie and buffer land that is being managed to restore its prairie quality. Although these areas are small, they are important remnants of the prairie that once existed in the Osage Plains Natural Division. Schell-Osage Prairie Relicts Natural Area is owned by the Department of Conservation. For further information contact the Wildlife Area Manager, Schell-Osage Wildlife Area, Box 137, Schell City, Missouri 64783, phone 417/432-3414.



Lichen Glade Natural Area

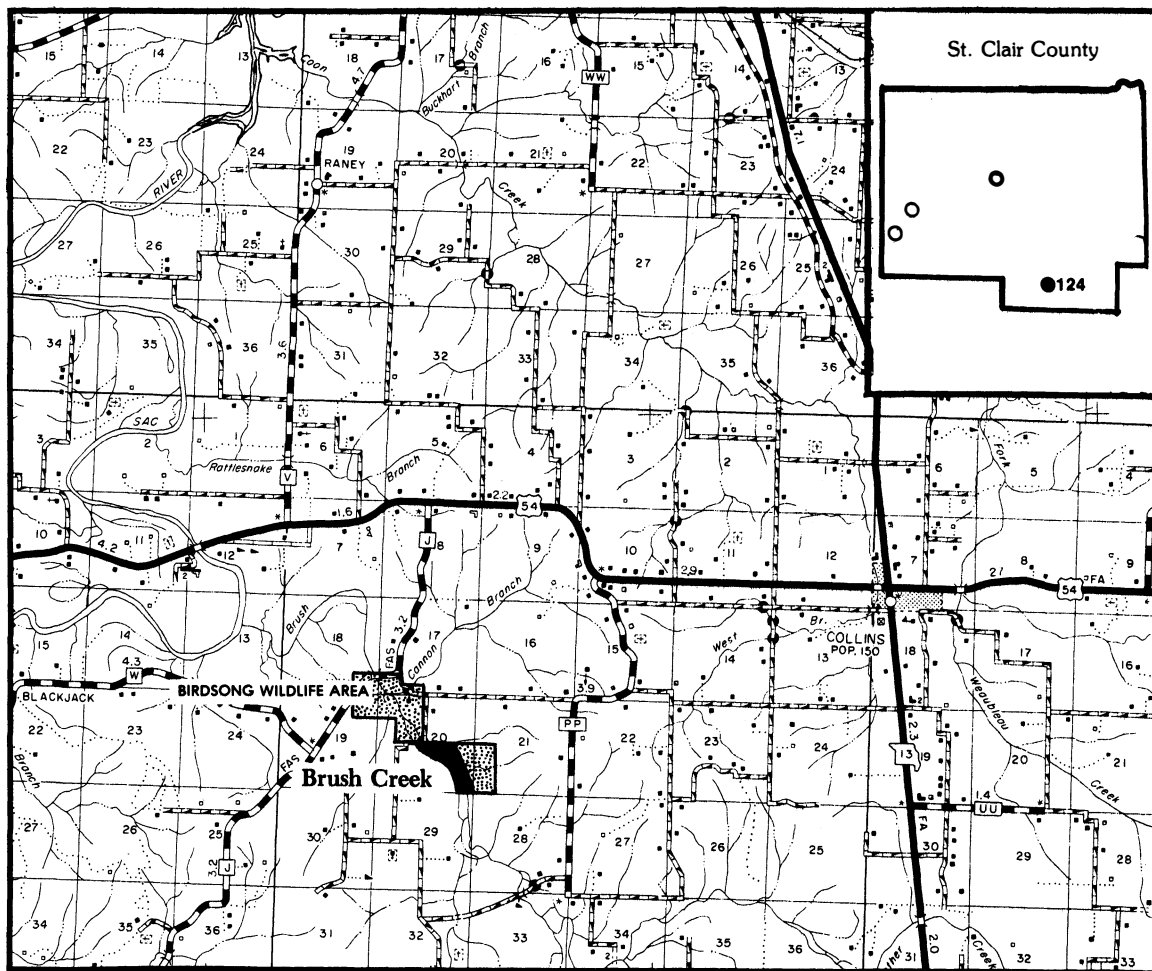
A 29-acre area about five miles west of Osceola on Hwy B in the S $\frac{1}{2}$ Sec. 16, T38N, R26W, Monegaw Springs 7.5 min. topographic map. Designated October 22, 1975.

Natural Features—A sandstone glade and bluff and a post oak-blackjack oak forest in the Springfield Plateau Section of the Ozark Natural Division. Glade vegetation includes lichens, mosses, ferns and many interesting and showy wildflowers such as blue toadflax (*Linaria canadensis*), fame flower (*Talinum calycinum* and *parviflorum*) and widow's cross sedum (*Sedum pulchellum*). The area also includes some bottomland forest along Salt Creek. Lichen Glade Natural Area is owned by The Nature Conservancy and managed by the Department of Conservation. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



GARY REESE

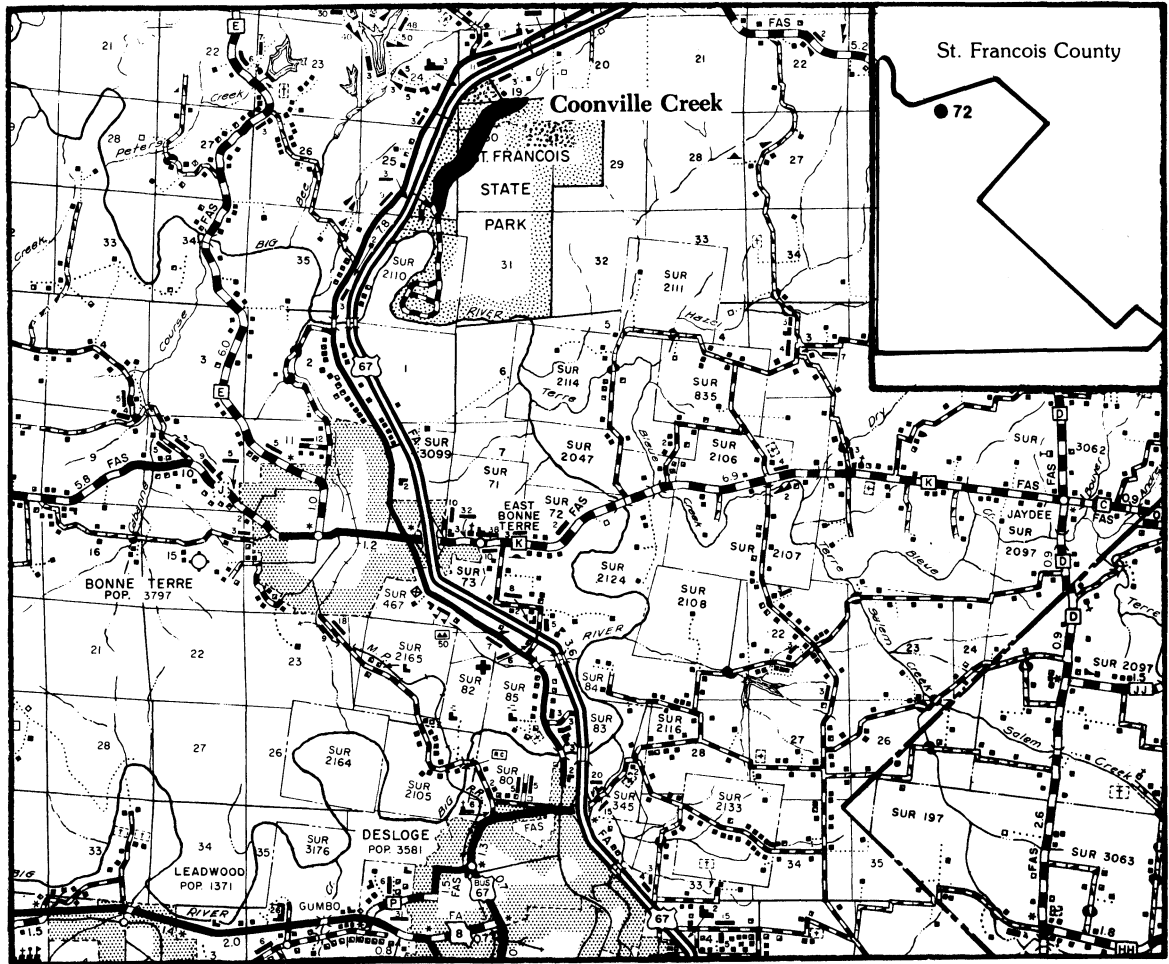
Salt Creek at Lichen Glade



Brush Creek Natural Area

A 26-acre portion of the Birdsong Wildlife Area which includes six-tenths of a mile of Brush Creek and buffer zone in the SE $\frac{1}{4}$ Sec. 20, T36N, R25W, Arnica 7.5 min. topographic map. Designated November 16, 1984.

Natural Features—A medium-sized, relatively undisturbed, Ozark headwaters stream with a diverse fauna and critical habitat for the federally threatened Niangua darter (*Etheostoma nianguae*). Brush Creek has a very stable channel and well-defined runs, riffles and pools. Forty-one species of fishes have been recorded for the area and invertebrate life is also diverse. Large golden redbreast, longear sunfish, northern hog sucker, Ozark minnow, bleeding shiner, rainbow darter and striped fantail darter are some of the common fishes. The buffer zone includes dolomite cliffs and upland forest. For further information contact the Wildlife District Supervisor, P.O. Box 147, Clinton, Missouri 64735, phone 816/885-5633.

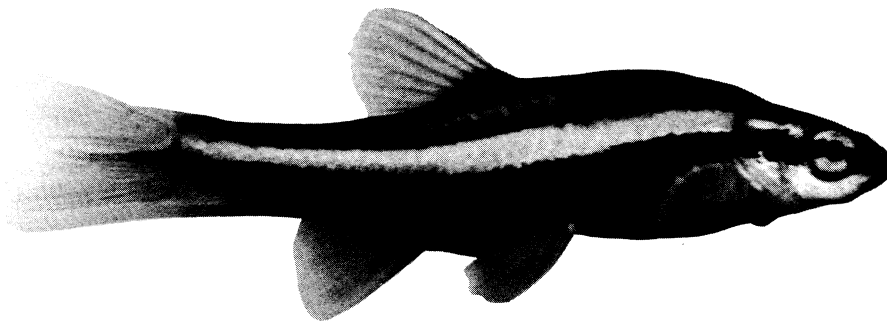


Coonville Creek Natural Area

A more-than-two-miles stretch (about 49 acres) along Coonville Creek in St. Francois State Park. Portions of Sec. 19 and 30, T38N, R5E and Sec. 25, T38N, R4E, Bonne Terre 7.5 min. topographic map. Designated September 18, 1979.

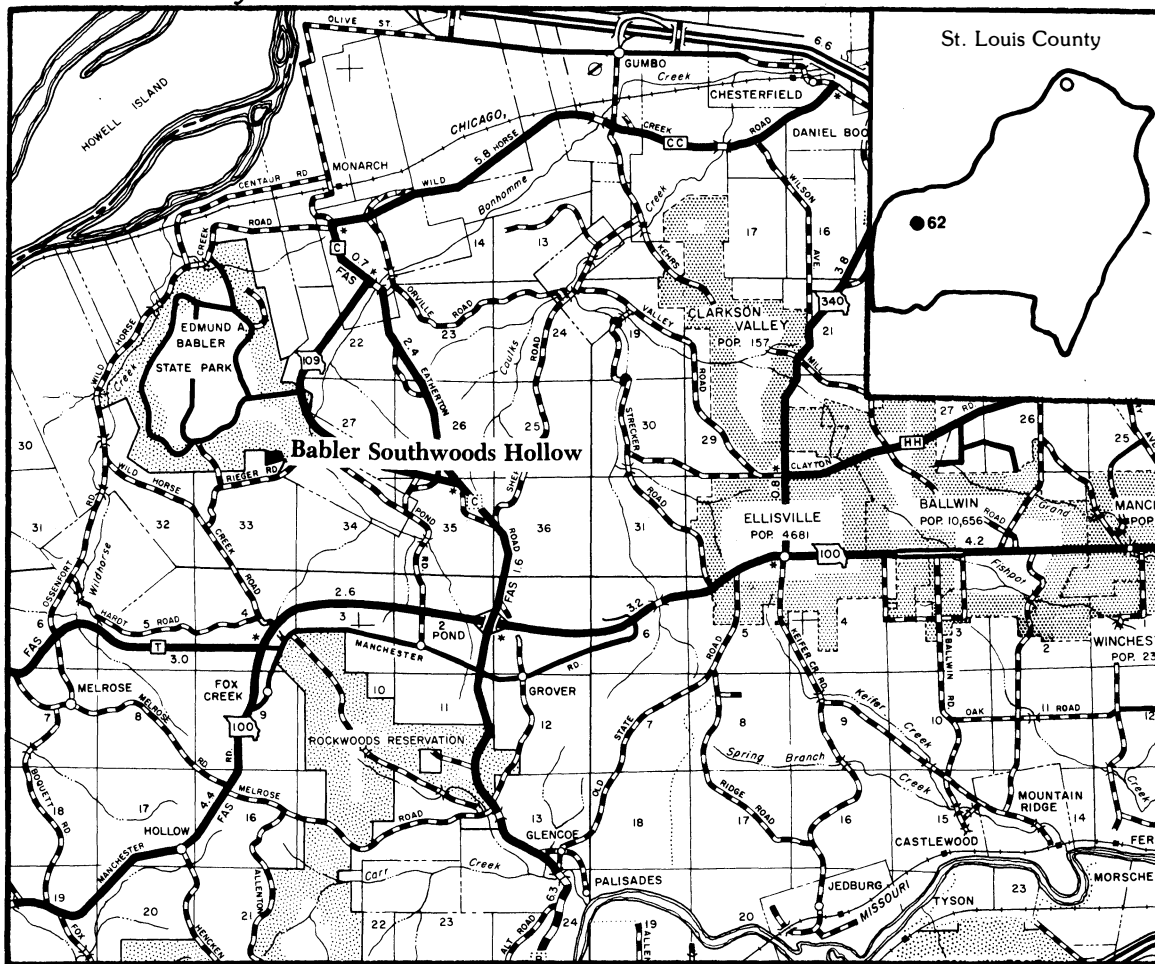
Natural Features—Coonville Creek is a small, permanent headwater stream within the Ozark Border Natural Division. The creek is nurtured by numerous seeps, and the streambed is dolomite bedrock with small cascades and cherty gravel bars. Eighteen species of fish are recorded in this stream including the southern redbelly dace, fantail

darter and the orangethroat darter. Seeps emerging along the valley create permanent, boglike meadows known as fens. These meadows support many rare plants including Queen-of-the-prairie (*Filipendula rubra*). The Department of Natural Resources owns this area. The natural and geologic history of Coonville Creek is interpreted in the Mooner's Hollow self-guiding trail brochure. For further information contact the Superintendent, St. Francois State Park, Bonne Terre, Missouri 63628, phone 314/358-2173.



Southern redbelly dace (*Chrosomus erythrogaster*)

WILLIAM PFLIEGER



Babler Southwoods Hollow Natural Area

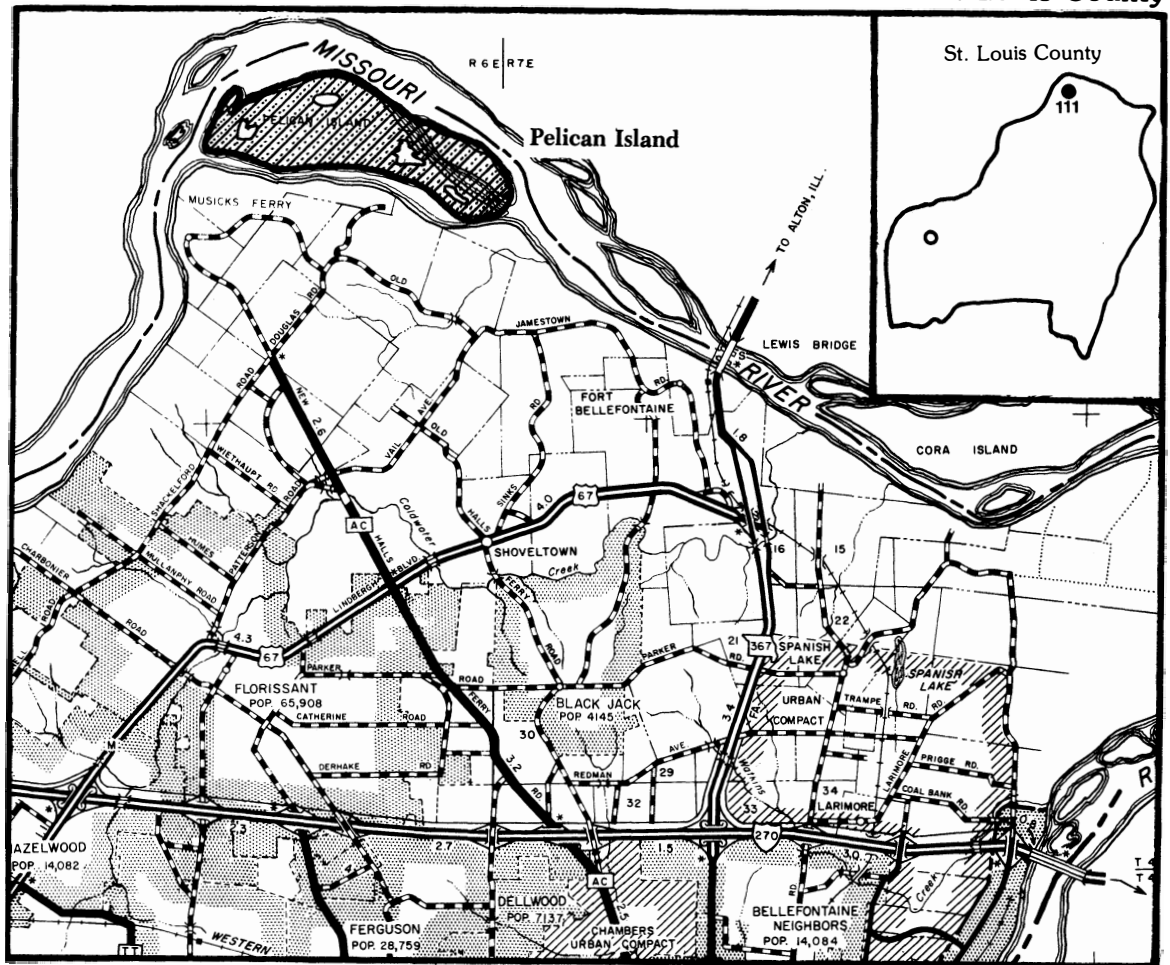
A 17-acre area in Babler State Park in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 28, T45N, R3E, Eureka 7.5 min. topographic map. Designated September 25, 1978.

Natural Features—Babler Southwoods Hollow Natural Area is in the Missouri River Section of the Ozark Natural Division in a region characterized by moderately dissected terrain underlain by limestone and capped with loess. The principal feature is a mesic upland forest dominated by old growth white oak-sugar maple in a narrow east-facing valley. The tract is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Babler State Park, 800 Guy Park Drive, Chesterfield, Missouri 63017, phone 314/458-3813.



PAUL NELSON

Mesic forest at Babler Southwoods Hollow Natural Area



Pelican Island Natural Area

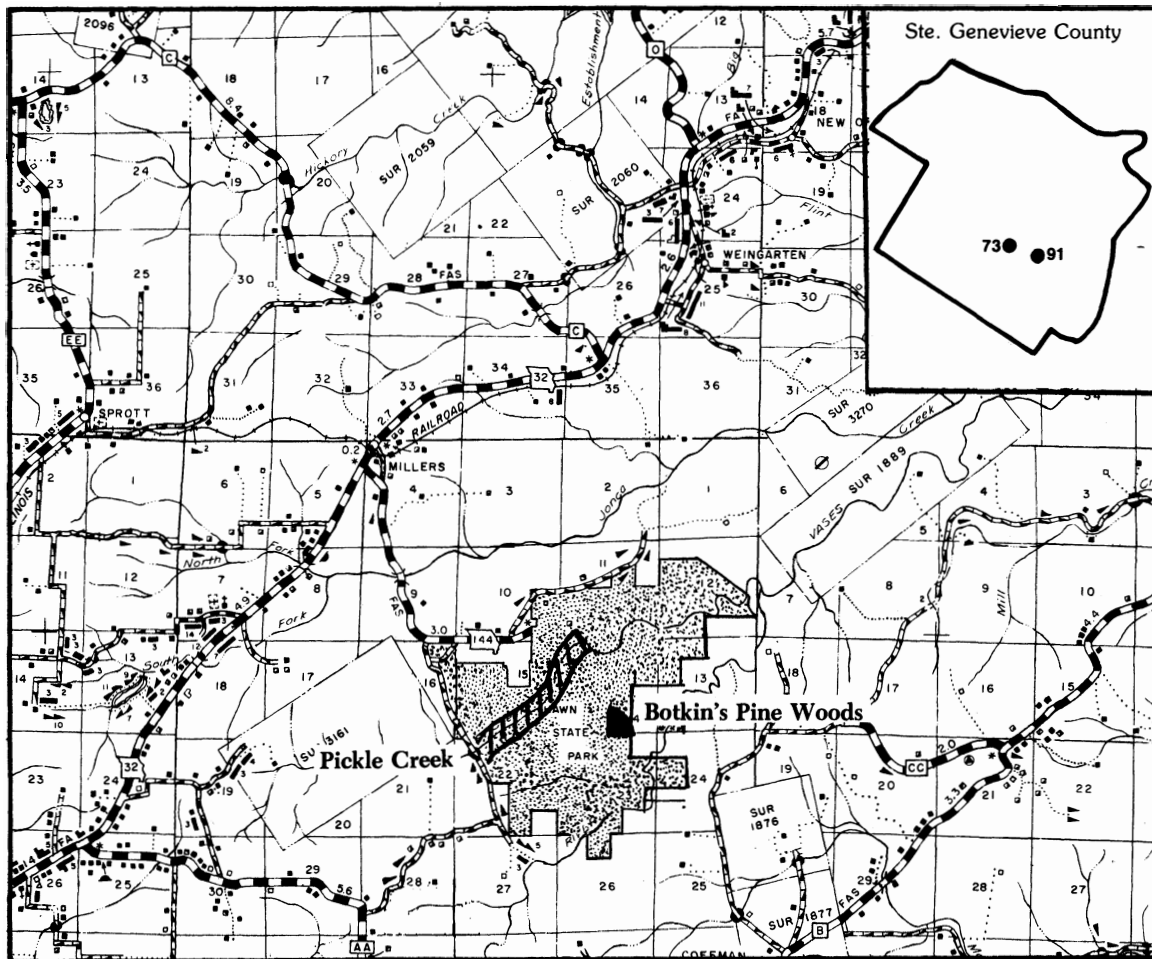
A 2,103.7-acre portion of Pelican Island County Park in the St. Louis County Park System, in T47-48N, R6-7E, Florissant and Elsah 7.5 min. topographic map. Land access during low water is possible via a rock dike or the island can be visited by boat. Designated February 14, 1983.

Natural Features—Pelican Island probably was named for the large number of white pelicans which formerly used the area during migration. It represents one of the best remaining examples of a Missouri River island in the Lower Missouri Section of the Big Rivers Natural Division. Many

large river islands have disappeared because of channelization. Principal natural features include a large expanse of bottomland forest, a riverine chute, sloughs, shifting sandbars and mudflats. Pelican Island is managed by the St. Louis County Parks and Recreation Department and is registered as a natural area with the Department of Natural Resources. For more information contact the St. Louis County Parks and Recreation Department, 41 South Central Ave., St. Louis, Missouri 63105, phone 314/889-2863.



Sandbar at Pelican Island Natural Area



Pickle Creek Natural Area

A 58-acre area along 2.4 miles of Pickle Creek in Hawn State Park. The natural area begins where Pickle Creek enters the park along Hawn Road and continues downstream to the end of the campground. Coffman 7.5 min. topographic map. Designated September 18, 1979.

Natural Features—High-quality, sandy-bottom, tea-colored stream draining LaMotte sandstone (Cambrian age). Also found along Pickle Creek are a number of in-

Botkins Pine Woods Natural Area

A 30-acre area within Hawn State Park in SW¹/₄ SE¹/₄ Sec. 14, T36N, R7W, Coffman 7.5 min. topographic map. Designated November 30, 1981.

Natural Features—A mature, mixed pine-oak forest within the Mississippi River Section of the Ozark Border Natural Division. Pure stands of shortleaf pine develop at

Orchid Valley Natural Area

A 120-acre unit of Hawn State Park. Designated October 27, 1977; entry by permit only.

Natural Features—Superb example of a stream having carved deeply into LaMotte sandstone, creating a terrain of steep valleys and sand-bottom streams flanked with sandstone cliffs, ledges and ravines. At least seven species of orchids and 17 species of ferns have been reported from the

Hickory Canyons Natural Area

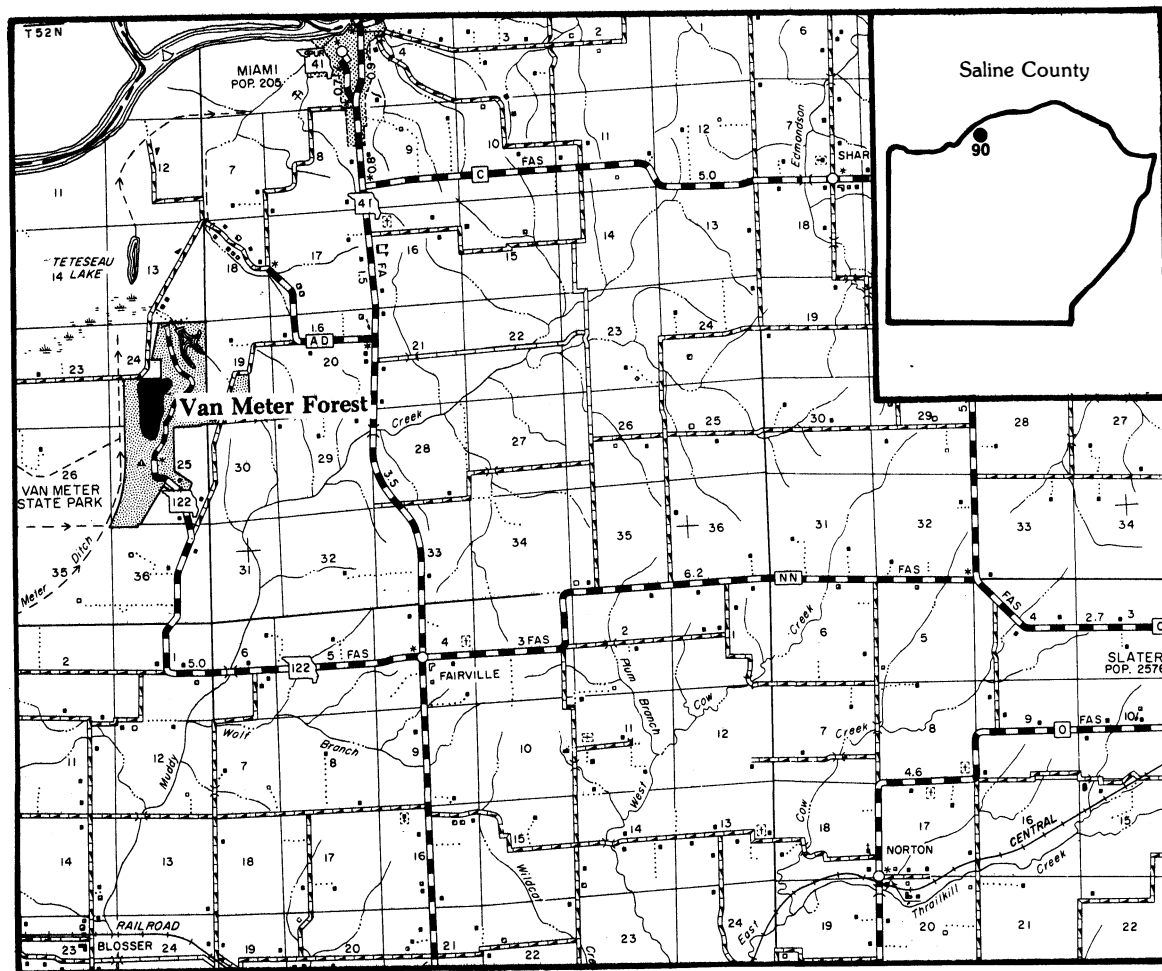
This 980-acre area in Ste. Genevieve County is owned by the L-A-D Foundation and managed by the Department of Conservation. For further information contact the District

teresting crystalline rocks of Precambrian age; a remote, narrow, forested valley with rough, broken topography; and an unusual diversity of plant communities with several rare species. Pickle Creek Natural Area is owned by the Department of Natural Resources. For more information contact the Park Superintendent, Hawn State Park, Route 3, Ste. Genevieve, Missouri 63670, phone 314/883-3603.

the head of coves and on side slopes which also harbor flowering dogwood, black gum, sassafras and white oak. Botkins Pine Woods is owned by the Department of Natural Resources. For further details contact the Superintendent, Hawn State Park, Route 3, Ste. Genevieve, Missouri 63670, phone 314/883-3603.

area. Orchid Valley Natural Area lies within the Mississippi River Section of the Ozark Border Natural Division. This area is owned by the Department of Natural Resources. For further information contact Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102, phone 314/751-2479.

Forester, Perryville Forest District, Box 152 (West Hwy T), Perryville, Missouri 63775, 314/547-4537.



Van Meter Forest Natural Area

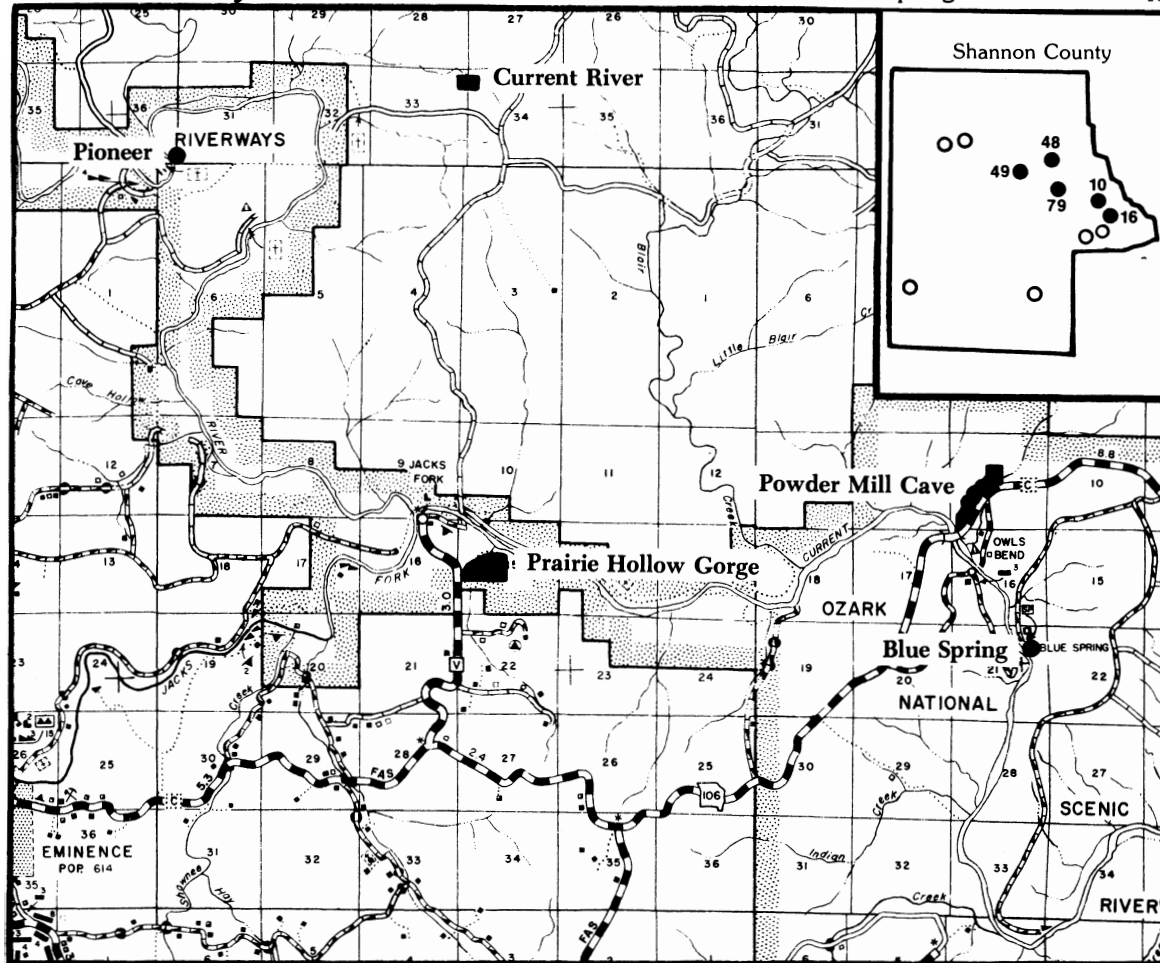
A 114-acre area in Van Meter State Park in parts of Sec. 24 and 25, T52N, R22W, Miami Station 7.5 min. topographic map. Designated October 20, 1981.

Natural Features—Van Meter Forest is of both geological and botanical interest within the Western Section of the Glaciated Plains Natural Division. The Pinnacles and Devil's Backbone are two geologic features of significance. The Pinnacles consist of extremely rugged, serrated ridges of dunelike loess. Devil's Backbone is an unusually sharp ridge lying in the southern part of the Pinnacles. The steep slopes, ridges and ravines are covered with rich mesic forest with a diverse and undisturbed understory. Remnants of old growth forest occur primarily in ravine pockets. The area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Van Meter State Park, Miami, Missouri 64344, phone 816/886-7537.



Chipmunk and Cecropia moth

CHARLES W. SCHWARTZ



Powder Mill Cave Natural Area

A 100-acre portion of the Bloom Creek State Forest located 12 miles east of Eminence off Hwy 106. Part of Sec. 9, T29N, R2W, Powder Mill Ferry 7.5 min. topographic map. Designated December 29, 1971.

Natural Features—A limestone cave and spring branch and surrounding forest in the Lower Ozark Section of the Ozark Natural Division. The cave has a population of nationally endangered Indiana bats. The spring branch has been used intermittently by beavers and is an excellent ex-

ample of the natural changes these animals can bring to an area. Powder Mill Cave is owned by the Department of Conservation. To protect the endangered bats and other cave life from disturbance, Powder Mill Cave has been gated and, with the exception of a small portion just inside the cave's entrance, is closed to visitors. For further information contact the District Forester, Eminence Forest District, Box G (Hwy 19 North), Eminence, Missouri 65466, phone 314/226-3616.

Blue Spring Natural Area

A 17-acre portion of the Carr Creek State Forest along the Current River about 1½ miles downstream from the Powder Mill Ferry Bridge in Sec. 21, T29N, R2W, Powder Mill Ferry 7.5 min. topographic map. Access is via a steep gravel road off Hwy 106, by foot trail from Owl's Bend Campground or by boat. Designated June 27, 1972.

Natural Features—A large, beautiful, undisturbed spring and spring branch with associated aquatic plants and animals surrounded by forest in the Lower Ozark Section of the Ozark Natural Division. A depth of more than 300 feet makes Blue Spring Missouri's deepest. It ranks sixth in

average daily flow (90 million gallons). An informational brochure is available for this natural area which is owned by the Department of Conservation. Public cooperation is essential to maintain Blue Spring's pristine quality. Please stay on designated trails to protect the vegetation. Wading, swimming, boating and fishing are prohibited in the spring and spring branch. For additional information contact the District Forester, Clearwater Forest District, Route 1, Box 1 (Hwy 34), Piedmont, Missouri 63957, phone 314/223-4525.

Current River Natural Area

A ten-acre area about 15 miles south of Bunker in a remote part of Shannon County in Sec. 33 and 34, T30N, R3W. Access is by foot from a woods road off a county gravel road and requires a quarter-mile walk. The area is difficult to locate, and a topographic map (The Sinks 7.5 min. topographic map) is recommended. Designated August 18, 1977.

Natural Features—An undisturbed old growth oak forest with white oaks more than 300 years old on a steep, north-facing slope in the Lower Ozark Section of the Ozark

Pioneer Natural Area

A 20-acre area about seven air miles north of Eminence near the Current River. The area is most accessible from the Current River. Access by land requires traversing about nine miles of four-wheel-drive road. Part of Lot 6, Sec. 36, T30N, R4W, Eminence 7.5 min. topographic map. Designated August 18, 1977.

Natural Features—A six-acre stand of old growth eastern red cedar and associated hardwoods, and a forested buffer zone. Pioneer Natural Area is owned by the L-A-D

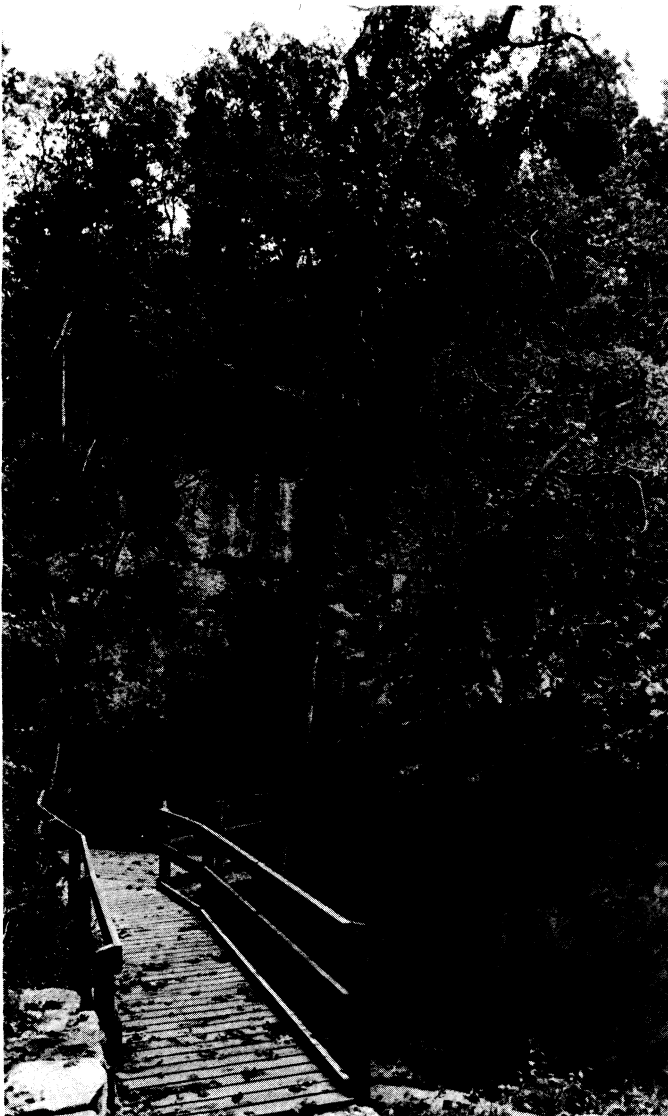
Natural Division. White oak is the dominant tree. Current River Natural Area is owned by the L-A-D Foundation and registered with the Department of Conservation. This area is also registered into the Society of American Foresters natural area system. The University of Missouri has certain responsibilities for research and management of the area. For further information contact the District Forester, Eminence Forest District, Box G (Hwy 19 North), Eminence, Missouri 65466, phone 314/226-3616.

Foundation and registered with the Department of Conservation. This area is also registered into the Society of American Foresters natural area system. The University of Missouri has certain responsibilities for research and management of the area. For further information contact the District Forester, Eminence Forest District, Box G (Hwy 19 North), Eminence, Missouri 65466, phone 314/226-3616.

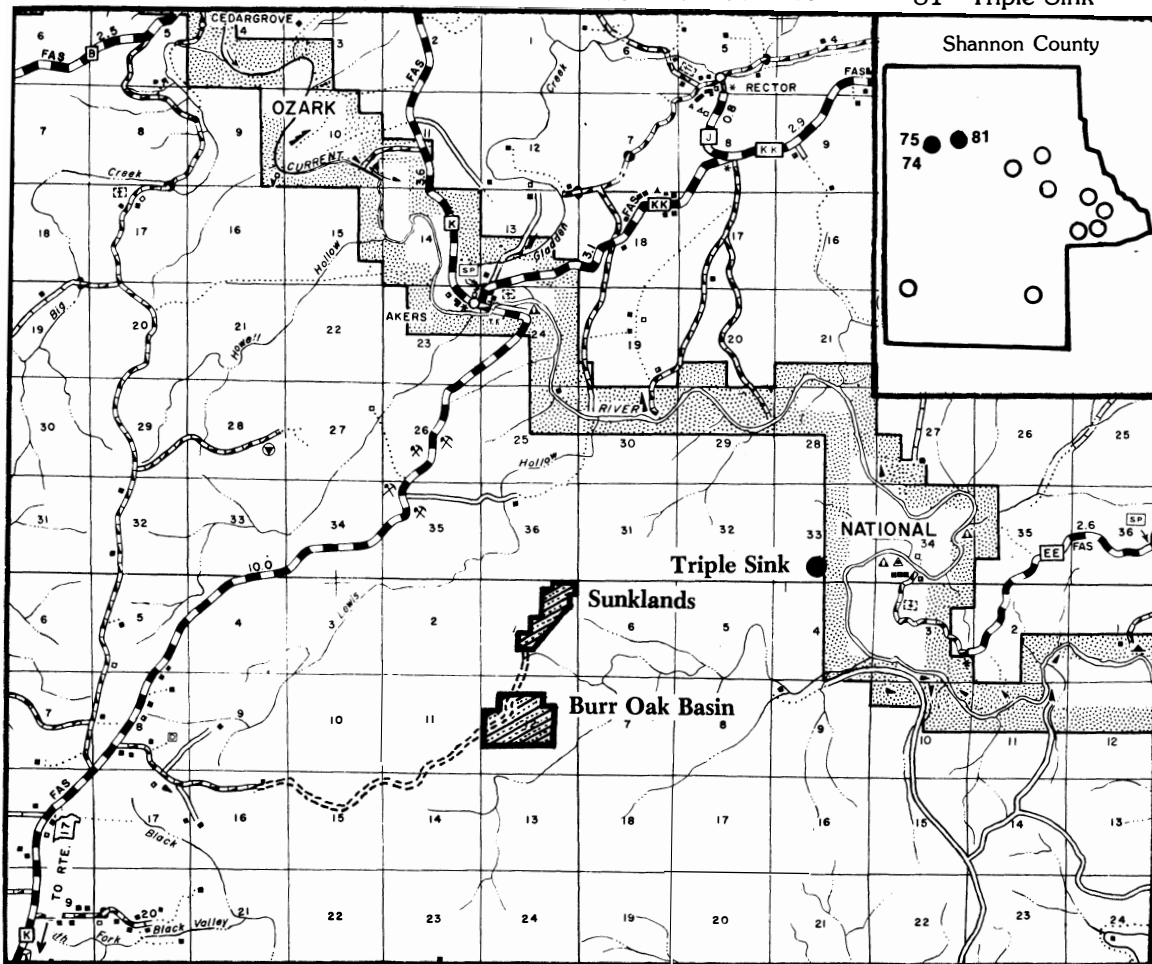
Prairie Hollow Gorge Natural Area

A 74-acre tract in the Ozark National Scenic Riverways in Sec. 15, T29N, R3W, Eminence 7.5 min. topographic map. Designated May 27, 1980.

Natural Features—Classic example of an igneous gorge with sheer canyon walls, shut-ins, talus slopes and igneous glades. On steep slopes are high-quality dry igneous upland forests dominated by shortleaf pine and white oak. Understory includes highbush blueberry, lowbush blueberry and thick carpets of mosses and lichens. Within the gorge is an intermittent stream featuring deep pools, shut-ins and a gravel wash with large boulders. This area is owned by the National Park Service, Ozark National Scenic Riverways and is registered with the Department of Natural Resources. For further information contact the National Park Service, P.O. Box 490, Van Buren, Missouri 63965, phone 314/323-4236.



Blue Spring



The Sunklands and Burr Oak Basin Natural Areas

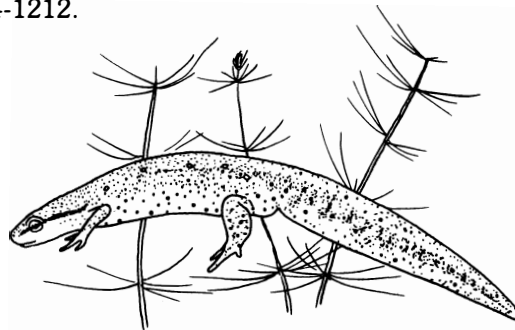
These two areas are very close to each other. The Sunklands (160 acres) and Burr Oak Basin (230 acres) are located about ten miles northeast of Summersville in a remote part of Shannon County, parts of Sec. 1 and 12, T30N, R6W, Lewis Hollow 7.5 min. topographic map. Access is from an unimproved logging road off of Hwy K. The access road is usable mainly by pickups and four-wheel-drive vehicles. Visitors should inquire about conditions in advance. Designated February 27, 1980.

Natural Features—Many excellent examples of karst topography and plant communities in the Lower Ozark Section of the Ozark Natural Division. The Sunklands is the longest conspicuous sinkhole or collapse structure in Missouri. It is a nearly one-mile-long series of forested sinkholes and a sinkhole pond. Burr Oak Basin has three very large sink basins, one boggy and two dry, and upland forest vegetation. These natural areas are owned by the Department of Conservation. Vehicles are restricted to the main access road. Camping is prohibited in the designated area. For more information and for current road conditions contact the District Forester, Eminence Forest District, Box G (Hwy 19 North), Eminence, Missouri 65466, phone 314/226-3616.

Triple Sink Natural Area

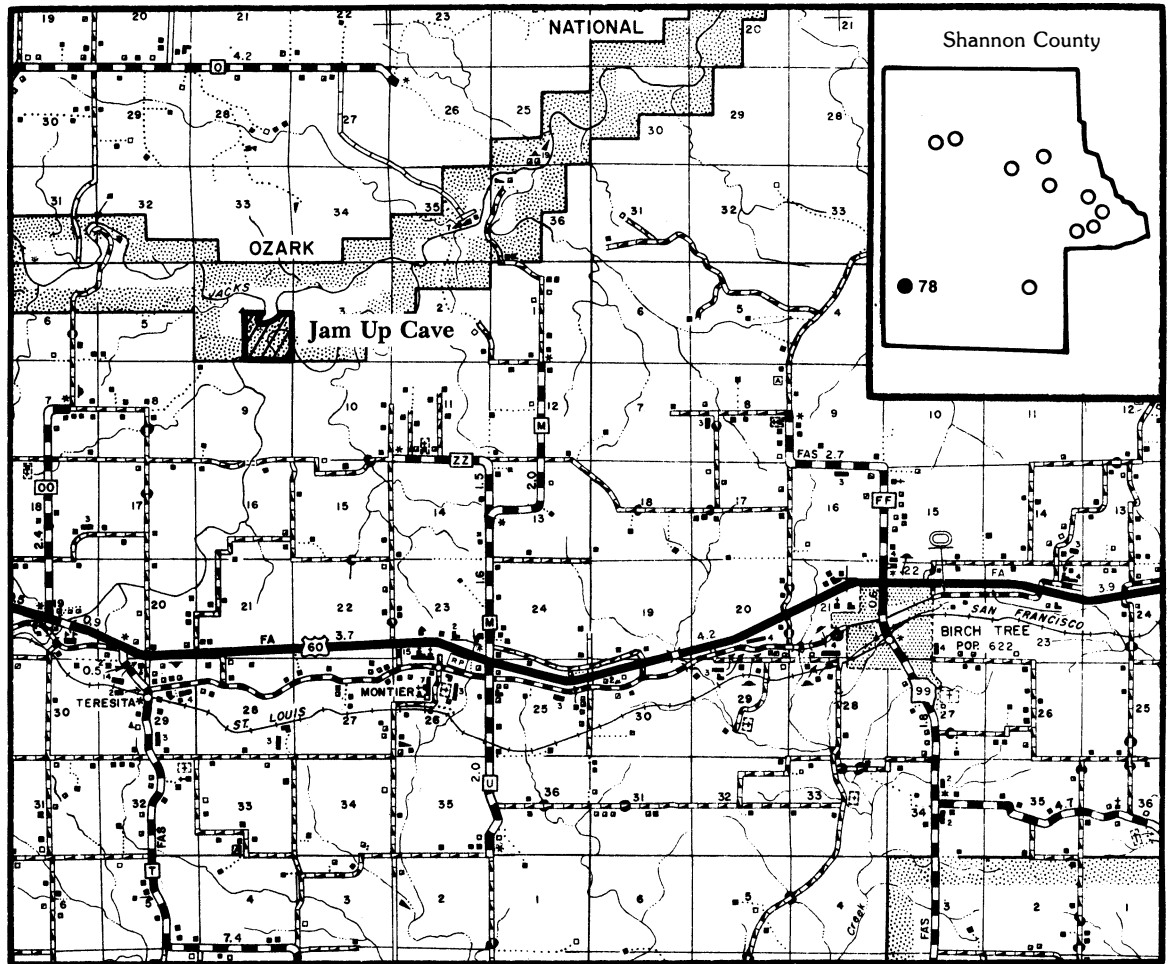
A 23-acre area about five miles southeast of Akers in Sec. 33, T31N, R5W, Round Spring 7.5 min. topographic map. Access is by crossing the Current River at Pulltight Spring Campground or by woods trail from Lewis Hollow requiring truck or four-wheel drive and considerable walking. Designated August 6, 1980.

Natural Features—A complex of three forested sinkholes within a steep-sided basin and associated plants and animals in the Lower Ozark Section of the Ozark Natural Division. Each of the sinkholes has slightly different characteristics in size, depth and vegetation. The area is owned by the Frank B. Powell Lumber Company and is registered with the Department of Conservation. For further information contact Frank B. Powell Lumber Company, 6th and Rolla Streets, Rolla, Missouri 65401, phone 314/364-1212.



Central newt

TOM R. JOHNSON



Jam Up Cave Natural Area

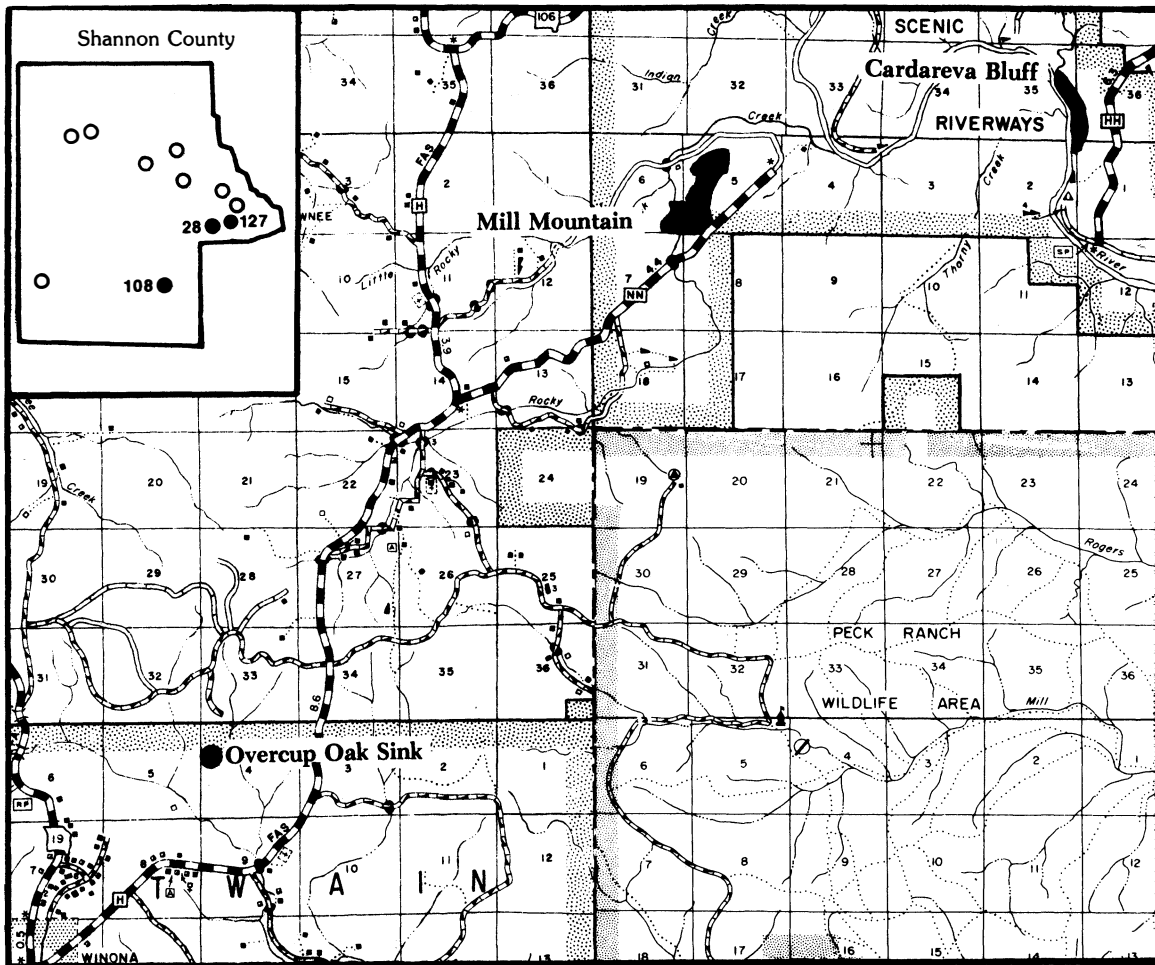
A remote, 148-acre area along the Jacks Fork River in the Ozark National Scenic Riverways, SE¼ Sec. 4, T27N, R6W, Jam Up Cave 7.5 min. topographic map. Access is best by canoe, but it can be reached on foot with the aid of a topographic map. Designated May 27, 1980.

Natural Features—A variety of karst features including an enormous cave entrance, a swallow hole, a subterranean waterfall, a steep-walled sinkhole and a karst window. The cave opens into a magnificent dolomite cliff capped by sandstone. The arch of the cave is 80 feet high and at least 100 feet wide and is partially blocked by huge boulders piled at the entrance. Many rare plants and mosses representing northern relicts of the glacial period thrive at the site, which also includes a glade, a moist dolomite bluff and a mesic forest. Jam Up Cave is in the Lower Ozark Section of the Ozark Natural Division. The area is registered with the Department of Natural Resources and managed by the National Park Service, Ozark National Scenic Riverways. For further information contact the National Park Service, P.O. Box 490, Van Buren, Missouri 63965, phone 314/323-4236.



Little brown bat

JAMES D. WILSON



Mill Mountain Natural Area

A 180-acre area located 11 miles northeast of Winona within the Mule Mountain State Forest and the Ozark National Scenic Riverways. Part of Sec. 5 and 6, T28N, R2W, Stegall Mountain and Powder Mill Ferry 7.5 min. topographic maps. Designated December 18, 1973 (MDC portion) and February 14, 1983 (NPS portion).

Natural Features—A scenic area in the Lower Ozark Section of the Ozark Natural Division with upland pine-oak-cedar forest on soils formed from igneous rocks, igneous talus slopes and igneous glades. Rocky Creek, a headwaters stream with a shut-in and interesting fish fauna, flows through the area. The Ozark Trail crosses the area. Mill Mountain Natural Area is jointly owned by the Department of Conservation (40 acres) and the National Park Service (140 acres); the National Park Service portion is registered with the Department of Natural Resources. Camping and open fires are prohibited. For further information contact the District Forester, Missouri Department of Conservation, Box G (Hwy 19 North), Eminence, Missouri 65466, phone 314/226-3616, or the Superintendent, Ozark National Scenic Riverways, National Park Service, P.O. Box 490, Van Buren, Missouri 63935, phone 314/323-4236.

Overcup Oak Sink Natural Area

A five-acre area northwest of Winona within the Mark Twain National Forest in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 4, T27N, R3W, Winona 7.5 min. topographic map. Access is by a woods road leading off State Roads 325 and 313, 4 $\frac{1}{2}$ miles from Hwy 19. Designated February 1, 1983.

Natural Features—A one-acre stand of overcup oak growing in a shallow, moist sinkhole with gently sloping sides in the Lower Ozark Section of the Ozark Natural Division. A good example of a sinkhole with wet soil conditions and natural vegetation. The natural area is owned and managed by the U.S. Forest Service. It is registered with the Department of Conservation. For further information contact the District Ranger, Winona Ranger District, Mark Twain National Forest, Route 1, Box 182 (Hwy 19 North), Winona, Missouri 65588, phone 314/325-4233.

Cardareva Bluff Natural Area

A 95-acre area along the Current River about 12 miles east of Eminence and ten miles southwest of Ellington in the Ozark National Scenic Riverways (55 acres) and the Cardareva State Forest (40 acres) in Sec. 35 and 36, T29N, R2W, and Sec. 1 and 2, T28N, R2W, Powder Mill Ferry Exchange and Stegall Mountain 7.5 min. topographic maps. Access is by foot from Hwy HH or from the Current River. Designated November 16, 1984.

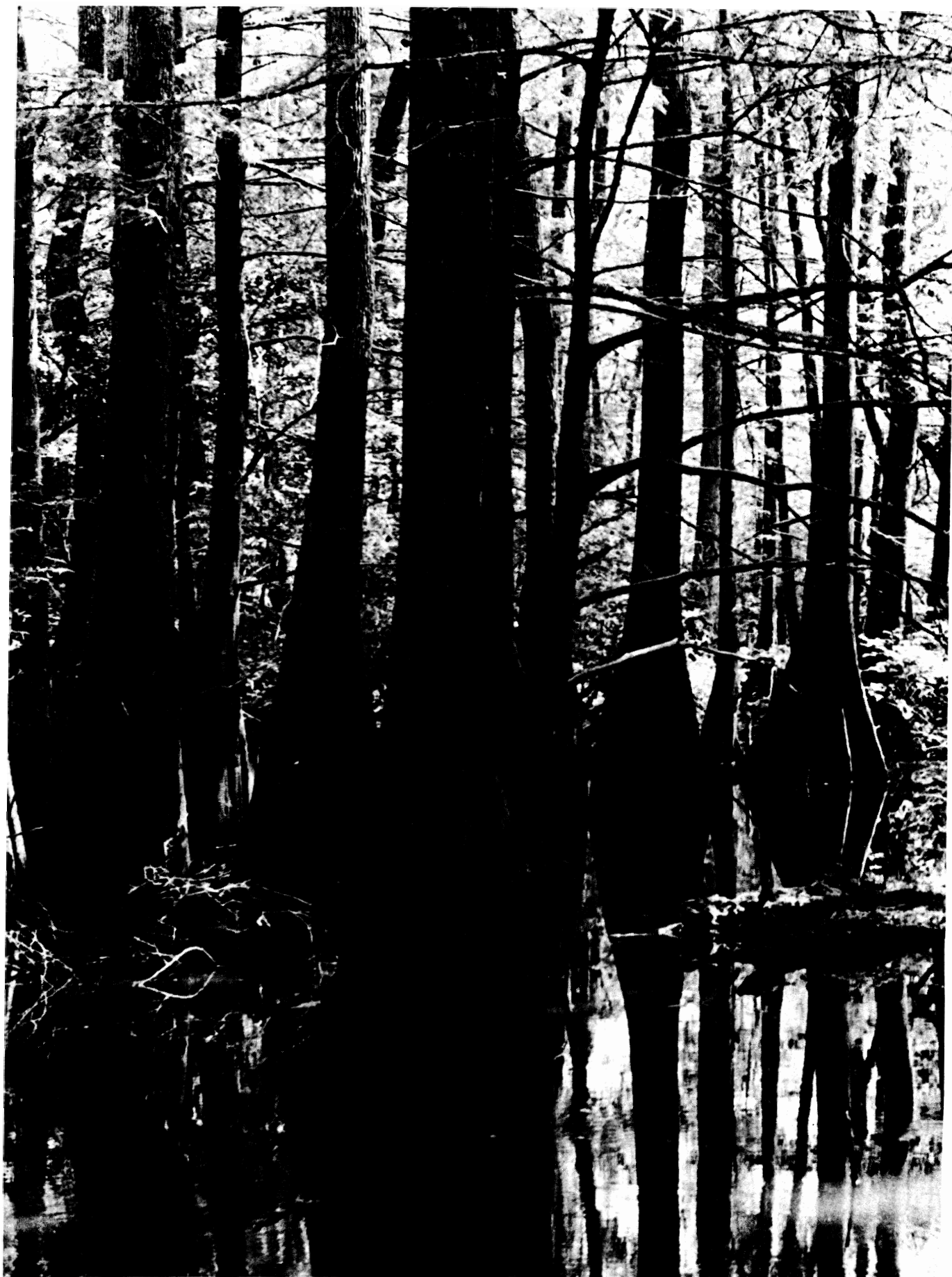
Natural Features—An outstanding, west-facing dolomite bluff rising about 550 feet above the Current River and associated plants, animals, natural communities and geological features in the Lower Ozark Section of the Ozark

Natural Division. Cardareva is one of Missouri's highest and steepest bluffs. The natural area includes the shoreline and gravel bars of the Current River, backwater sloughs, floodplain forest, upland forest, dolomite cliffs, dolomite glades and talus slopes. The area is owned by the National Park Service and the Department of Conservation. The NPS portion is registered with the Department of Natural Resources. For further information contact the National Park Service, P.O. Box 490, Van Buren, 63965, phone 314/323-4236 or the Resource Forester, P.O. Box 117, Ellington, Missouri, phone 314/663-7130.



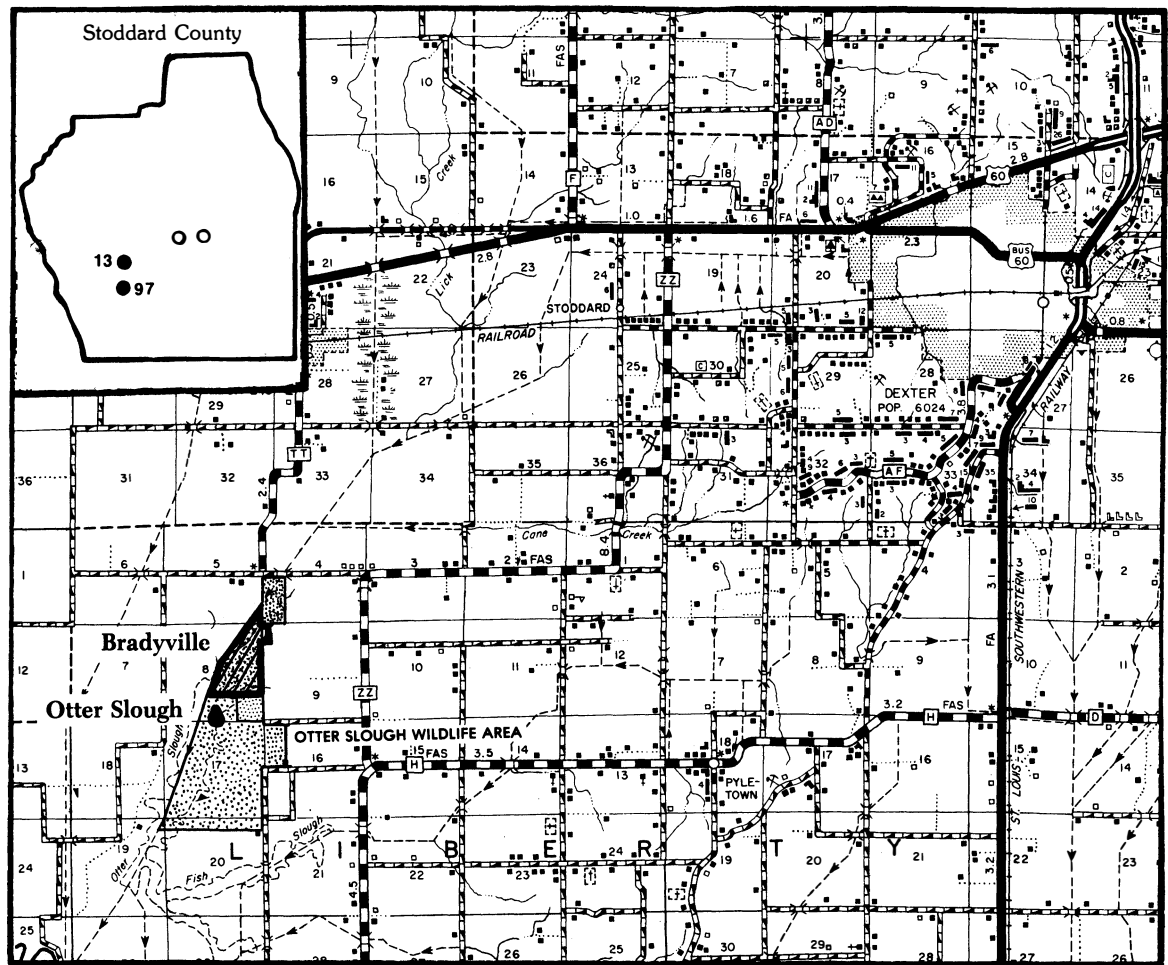
RICHARD THOM

Rhyolite shut-in on Rocky Creek, Mill Mountain Natural Area



GREGORY HOSS

High quality cypress — tupelo swamp in the Mississippi Lowland Natural Division



Bradyville Natural Area

A 139-acre portion of the Otter Slough Wildlife Area about eight miles southwest of Dexter in Sec. 5, 8, 9, T24N, R9E, Valley Ridge 15 min. topographic map. Access is by foot from a parking area a half-mile south of the natural area. Designated March 23, 1972.

Natural Features—Several types of bottomland forest and swamp, and characteristic wildlife of the Lowlands Section of the Mississippi Lowlands Natural Division. Trees on

the area include overcup, willow and post oak, sweetgum, tupelo and cypress. Copper iris (*Iris fulva*) and spider lily (*Hymenocallis occidentalis*) grow here. The area is owned by the Department of Conservation. For further information contact Wildlife Area Manager, Otter Slough Wildlife Area, Route 3, Box 388 B, Dexter, Missouri 63841, phone 314/624-5821.

Otter Slough Natural Area

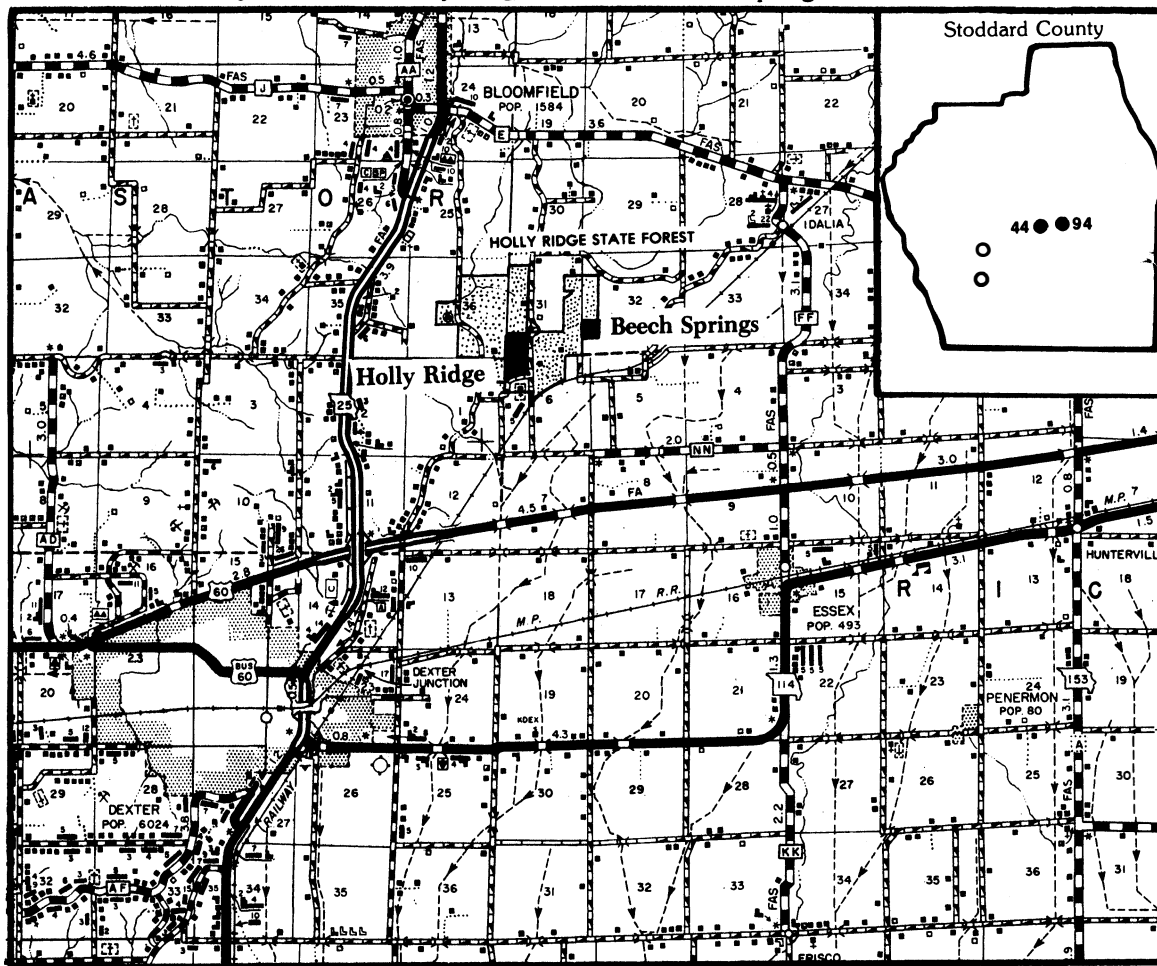
A 20-acre portion of the Otter Slough Wildlife Area in the W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 8, T24N, R9E, Valley Ridge 15 min. topographic map. This area is about eight miles southwest of Dexter and is accessible by boat from the area headquarters. Designated March 22, 1982.

Natural Features—This aquatic natural area features a shallow, winding slough that is an arm of Otter Lake. Swamp tupelo is the dominant tree and buttonbush is an abundant shrub that grows in the water. The area harbors many species of plants and animals that are characteristic of swamps in the Lowland Section of the Mississippi Lowlands Natural Division. The endangered pugnose minnow (*Notropis emiliae*) and rare bantam sunfish (*Lepomis symmetricus*) occur here. The area is owned by the Department of Conservation. For further information contact the Wildlife Area Manager, Otter Slough Wildlife Area, Route 3, Box 388 B, Dexter, Missouri 63841, phone 314/624-5821.



Tupelo swamp at Otter Slough Natural Area

RICHARD THOM



Holly Ridge Natural Area

An 84-acre area within the Holly Ridge State Forest about three miles southeast of Bloomfield on a county road in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 6, T25N, R11E, and the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 31, T26N, R11E, Dexter 7.5 min. topographic map. Designated February 13, 1976.

Natural Features—A natural stand of American holly, a beech-tulip tree-alder forest and a number of other rare and interesting plants in moist, sandy draws in Crowley's Ridge Section of the Mississippi Lowlands Natural Division. Several small springs and spring runs, one containing a state-endangered fish, the goldstripe darter (*Etheostoma parvipinne*). Most of the area is covered by oak-hickory forest. The area was donated to the Department of Conservation by The Nature Conservancy in 1975. For further information contact the District Forester, Bootheel Forest District, Box 631, Poplar Bluff, Missouri 63901, phone 314/785-2846.

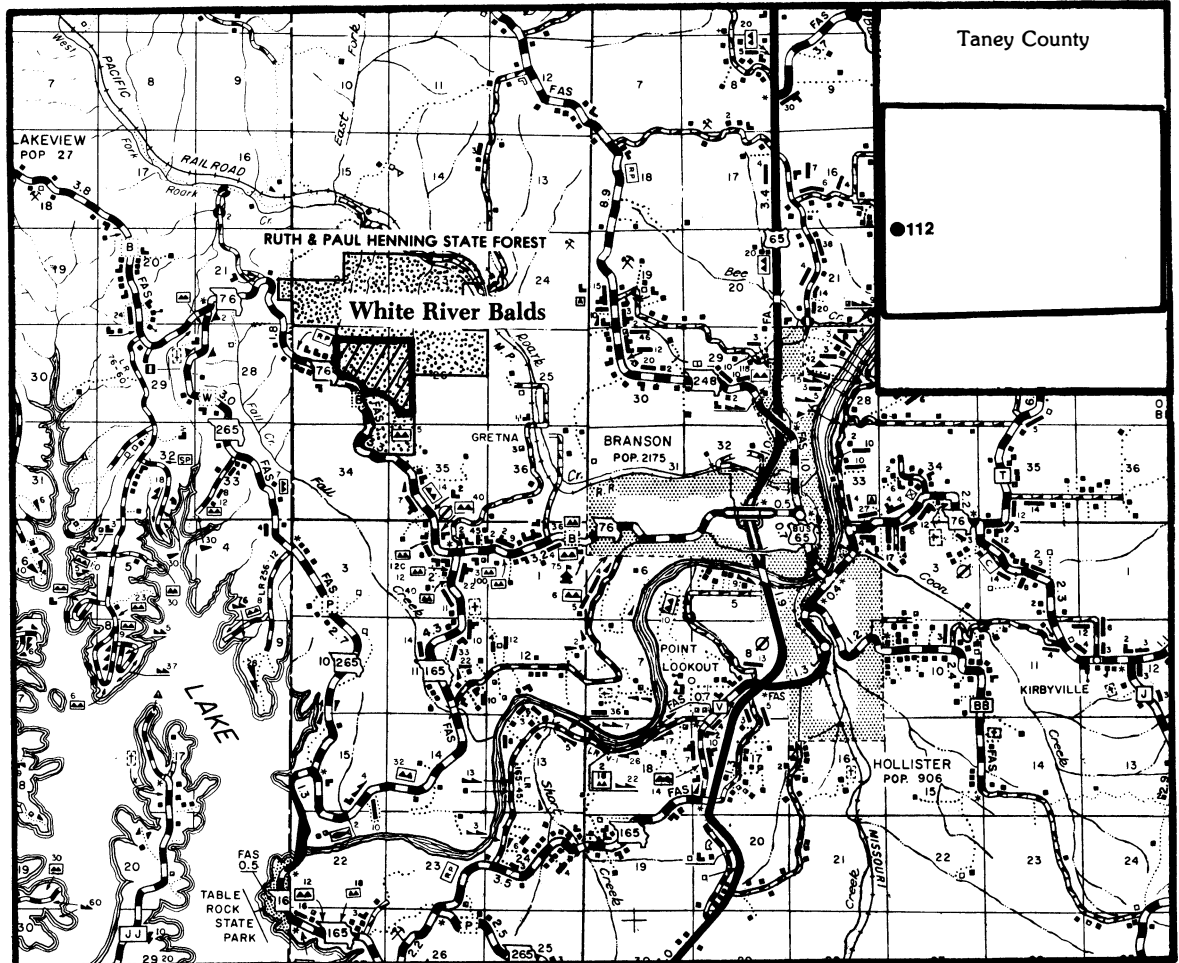


American holly (*Ilex opaca*)

Beech Springs Natural Area

A 35-acre portion of the Holly Ridge State Forest about three miles southeast of Bloomfield in the W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 32, T26N, R11E, Dexter 7.5 min. topographic map. Access is by foot from a gravel road west of the natural area. Designated December 4, 1981.

Natural Features—Several types of upland forest, springs, a small stream and a natural ephemeral pond in Crowley's Ridge Section of the Mississippi Lowlands Natural Division. The soils are loamy sand on the ridgetop and upper slopes, and deep silt loams on the lower slopes and along the creek. Black oak, post oak, serviceberry and farkleberry (*Vaccinium arboreum*) are common on the sandy soils and red and white oak, sweetgum, tulip tree, walnut, American beech and hackberry occur in the more moist sites. This area is owned by the Department of Conservation. For further information contact the District Forester, Bootheel Forest District, Box 631 (116 South Eighth St.), Poplar Bluff, Missouri 63901, phone 314/785-2846.



White River Balds Natural Area

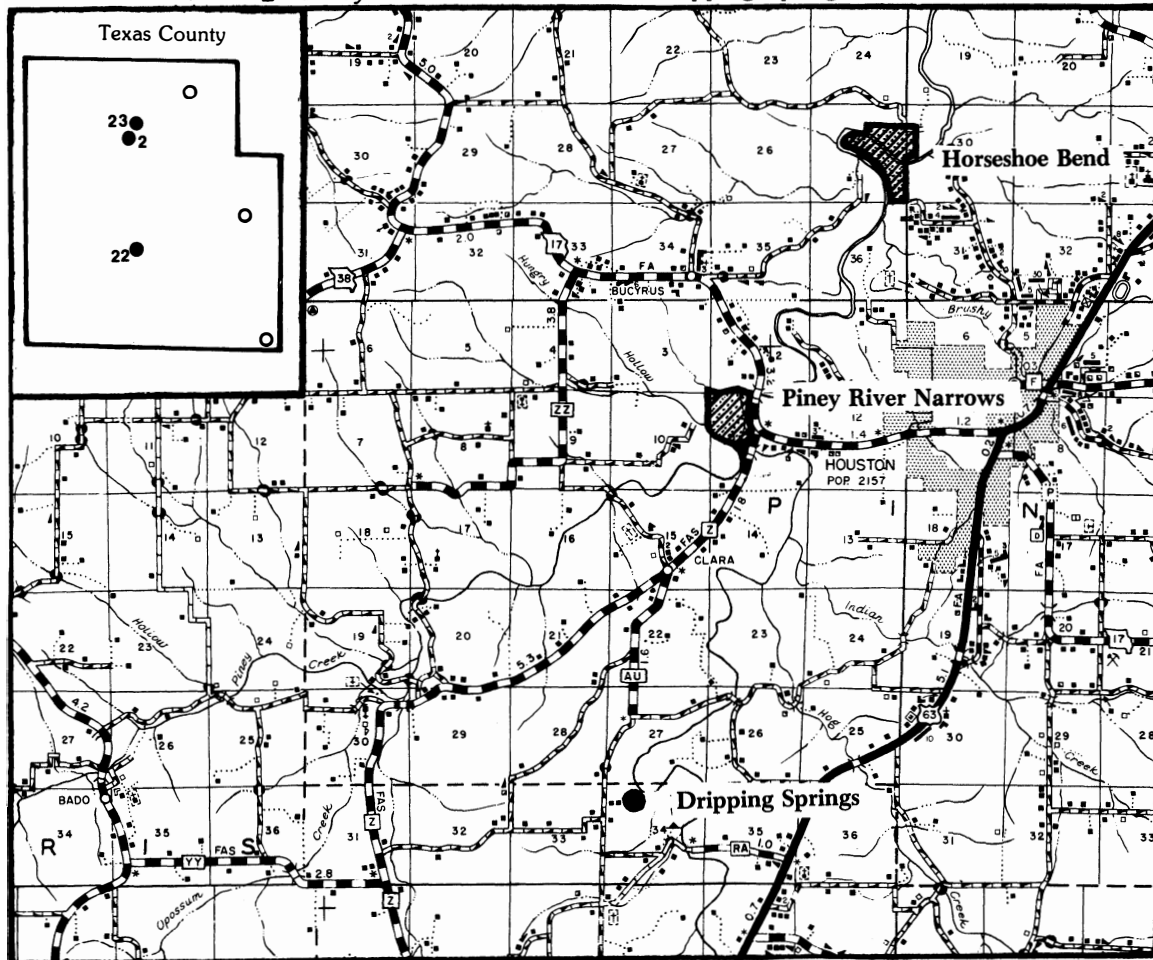
A 362-acre area four miles northwest of Branson on Hwy 76 within the Ruth and Paul Henning State Forest in parts of W $\frac{1}{2}$ Sec. 26 and E $\frac{1}{2}$ Sec. 27, T23N, R22W, Garber 7.5 min. topographic map. Designated April 19, 1983.

Natural Features—Large, scenic glades on Jefferson City-Cotter dolomite; dry, open woods surrounding the glades; and oak-hickory-cedar forest, an intermittent stream and rare species in the White River Section of the Ozark Natural Division. Smoke tree and Ashe juniper are uncommon trees which grow on the glades here. Collared lizards,

six-lined racerunners and many other reptiles occur. Beautiful glade wildflowers reward hikers and photographers. An informational brochure is available. The natural area is owned by the Department of Conservation. All natural features are protected. Camping, fires, horseback riding, wheeled vehicles and collecting of plants, animals and rocks are prohibited. For further information contact the District Forester, Springfield Forest District, 1675 East Seminole, Suite 100, Springfield, Missouri 65804, phone 417/881-5102.



Dolomite glade at White River Balds Natural Area



Piney River Narrows Natural Area

A 50-acre portion of a 258-acre public use area located about two miles west of Houston in the NW $\frac{1}{4}$ Sec. 11, T30N, R10W, Bado 15 min. topographic map. Designated December 20, 1971. Access from a parking area off Hwy 17 requires wading the Big Piney River to reach the geologic feature. The geologic feature can also be reached from Hwy Z south of Big Piney Bridge. There is no developed parking area on Hwy Z.

Natural Features—Limestone pinnacles and associated bluff and glade flora along a hogback ridge in the Upper Ozark Section of the Ozark Natural Division. The narrow ridge was carved by the Big Piney River and Piney Creek. Piney River Narrows is owned by the L-A-D Foundation and managed by the Department of Conservation. For further information contact the District Forester, West Plains Forest District, Box 138 (Hwy 160 West), West Plains, Missouri 65775, phone 417/256-7161.

Dripping Springs Natural Area

An 8 $\frac{1}{2}$ -acre area about seven miles southwest of Houston on the Big Piney River in the N $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 34, T30N, R10W, Bado 15 min. topographic map. Access is by boat from the river. Designated April 11, 1973.

Natural Features—A north-facing sandstone and dolomite cliff along the Big Piney River that is kept continually wet by several springs. Liverworts, mosses and

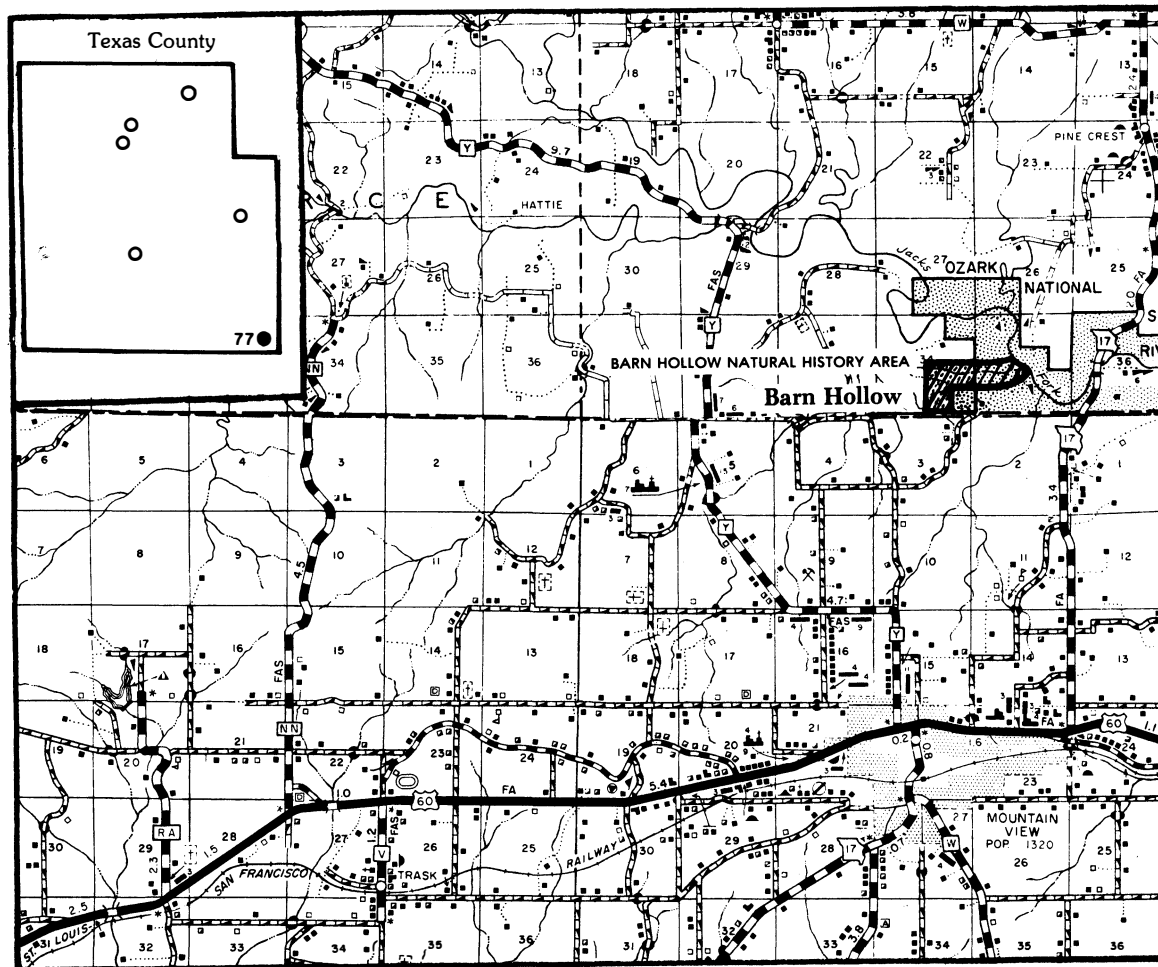
many other characteristic plants grow on the bluff and cliff face. It is in the Upper Ozark Section of the Ozark Natural Division. Dripping Springs is owned by the L-A-D Foundation and managed by the Department of Conservation. For further information contact the District Forester, West Plains Forest District, Box 138 (Hwy 160 West), West Plains, Missouri 65775, phone 417/256-7161.

Horseshoe Bend Natural Area

A 69-acre portion of a 222-acre public use area about 2 $\frac{1}{2}$ miles northwest of Houston by county road. Part of Sec. 25, T31N, R10W and Sec. 30, T31N, R9W, Houston 7.5 topographic map. Designated April 11, 1973.

Natural Features—About two miles of frontage on the Big Piney River; a high dolomite bluff; oak-pine, mixed oak-hickory and mixed bottomland forest; and buffer land in the

Upper Ozark Section of the Ozark Natural Division. The natural area is owned by the L-A-D Foundation and managed by the Department of Conservation. For further information contact the District Forester, West Plains District, Box 138 (Hwy 160 West), West Plains, Missouri 65775, phone 417/256-7161.



Barn Hollow Natural Area

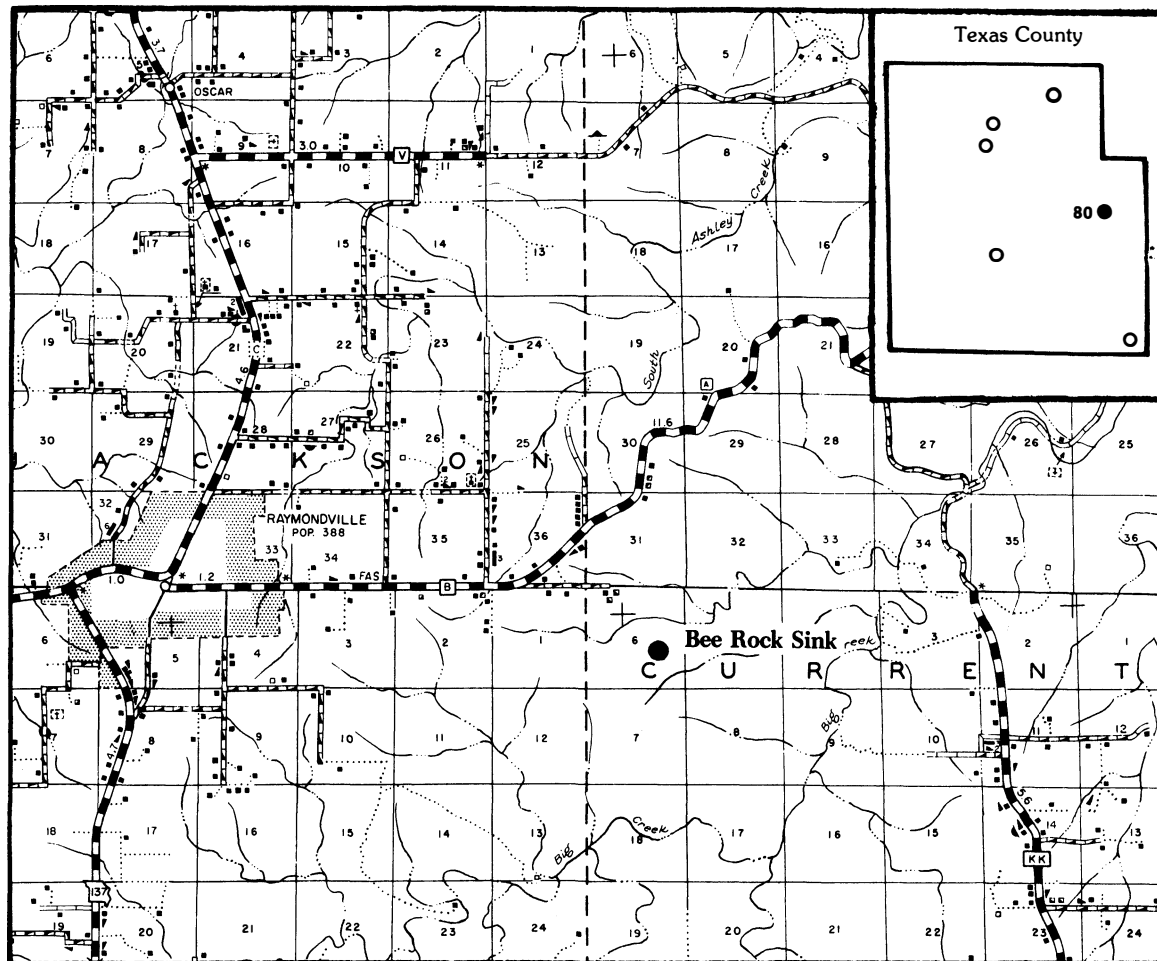
A 160-acre area in the Ozark National Scenic Riverways and on Conservation Department land, about three miles north of Mountain View in the SE $\frac{1}{4}$ Sec. 34 and SW $\frac{1}{4}$ Sec. 35, T28N, R7W, Pine Crest 7.5 min. topographic map. Access is from the south via a county road off Hwy Y, or from the Jacks Fork River.

Natural Features—A narrow, steep-walled hollow with dolomite cliffs and ledges, caves, an Ozark headwaters stream and associated plants and animals of the Lower Ozark Section of the Ozark Natural Division. Barn Hollow Creek is clear with small, deep pools, shallow riffles and shallow ponds caused by beaver dams. In places, the creek occupies the entire canyon from cliff to cliff. Bear Cave is in the National Park Service portion of the area. The Department of Conservation owns and manages 115 acres of the area, designated October 16, 1980. The remaining 45 acres, designated May 27, 1980, is owned and managed by the National Park Service, Ozark National Scenic Riverways, and is registered with the Department of Natural Resources. Camping and collecting of plants and animals is prohibited. For more information contact either the District Forester, Department of Conservation, Box 138 (Hwy 160 West), West Plains, Missouri 65775, phone 417/256-7161, or the Superintendent, Ozark National Scenic Riverways, National Park Service, P.O. Box 490, Van Buren, Missouri 63935, phone 314/323-4236.



RICHARD THOM

A dolomite pinnacle at Piney River Narrows Natural Area



Bee Rock Sink Natural Area

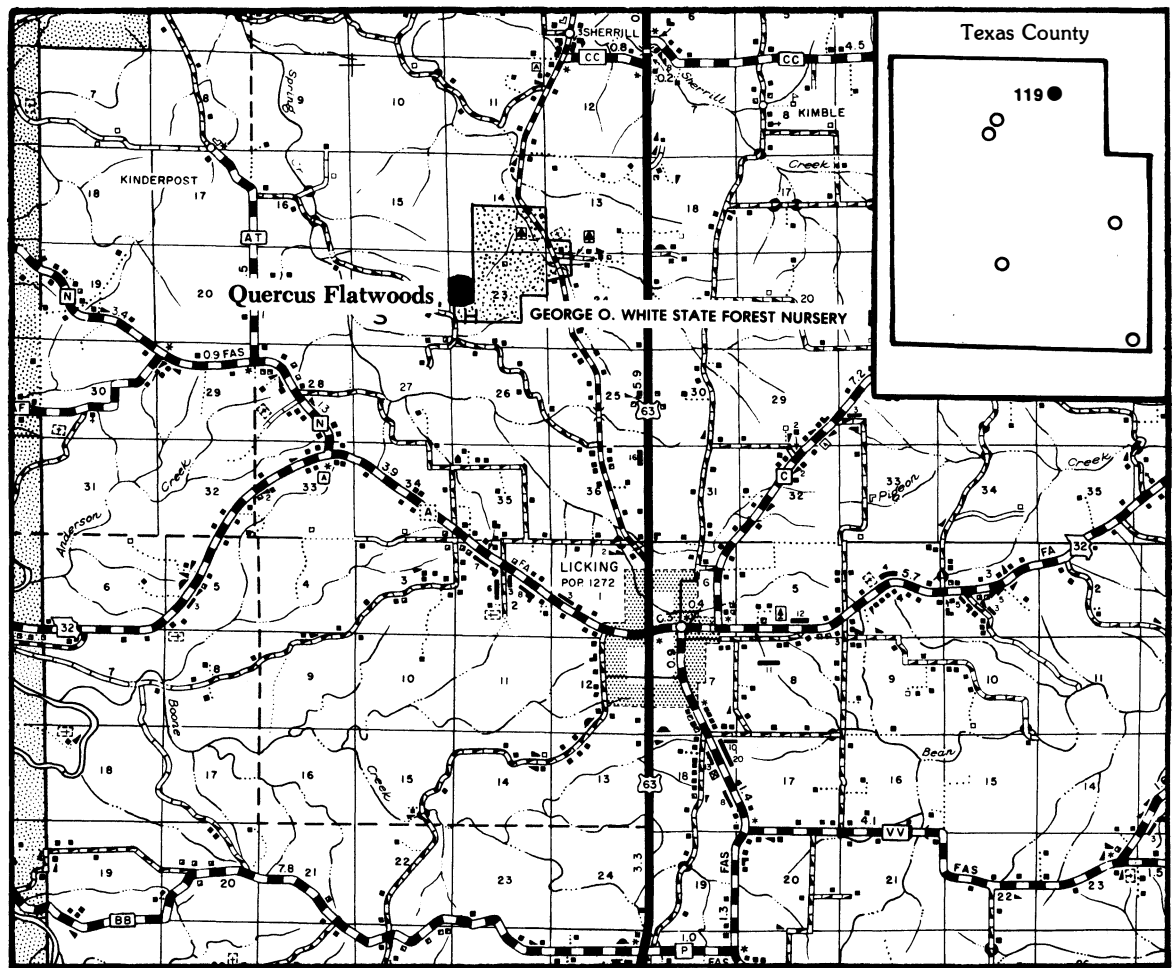
An eight-acre area located five miles east of Raymondville in Sec. 6, T30N, R7W, Hartshorn 7.5 min. topographic map. Access is by a woods road requiring a truck or four-wheel-drive vehicle. Designated August 6, 1980.

Natural Features—A small, steep sinkhole and its associated natural vegetation and animals in the Lower Ozark Section of the Ozark Natural Division. The sinkhole is surrounded by a pine-oak-hickory forest. Bee Rock Sink Natural Area is owned and managed by the Frank B. Powell Lumber Company. It is registered with the Department of Conservation. For further information contact Frank B. Powell Lumber Company, 6th and Rolla Streets, Rolla, Missouri 65401, phone 314/364-1212.

Quercus Flatwoods Natural Area

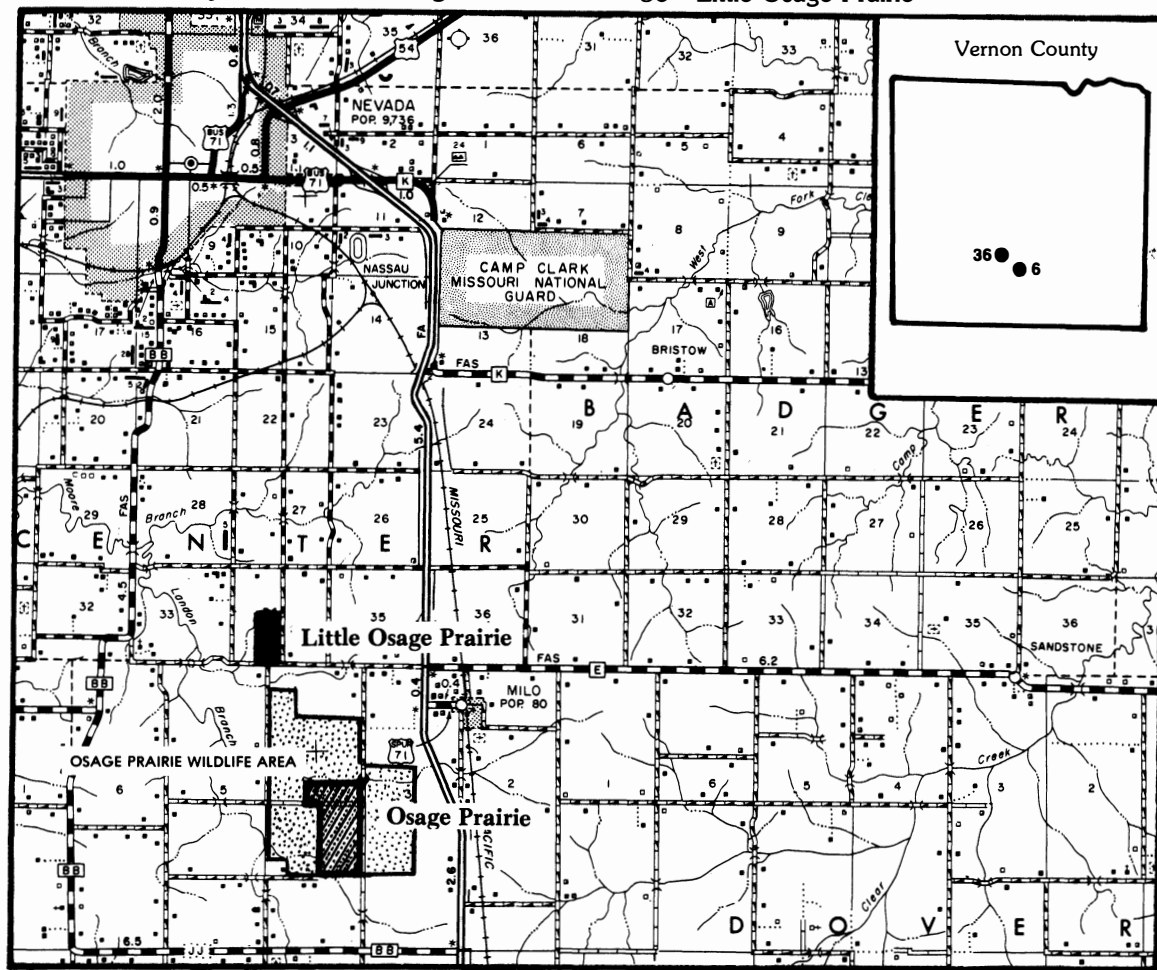
A 48-acre portion of the George O. White State Forest Nursery about 3½ miles northwest of Licking in Sec. 23, T33N, R9W, Beulah 7.5 min. topographic map. Access is by gravel road from the main entrance of the nursery. Designated December 19, 1983. *Quercus* is the Latin generic name for "oak," the dominant trees on this area.

Natural Features—An outstanding example of a flatwoods forest community with old post, black and blackjack oak on gently sloping, fragipan soils. The dominant post oaks are more than 200 years old. The fragipan layer in the soil restricts root penetration and tree growth. The area is owned by the Department of Conservation. For further information contact the Nursery Superintendent, Route 2, Licking, Missouri 65542, phone 314/674-3229.



Post Oak Flatwoods at Quercus Flatwoods Natural Area

RICHARD THOM



Osage Prairie Natural Area

A 335-acre portion of the 1,467-acre Osage Prairie Wildlife Area about five miles south of Nevada, part of Sec. 4, T34N, R31W, Nevada and Sheldon 7.5 min. topographic maps. Access is by foot from a parking lot on the wildlife area. Designated August 26, 1975 and December 20, 1971.

Natural Features—A large remnant of the tallgrass prairie ecosystem with high plant diversity in the Osage Plains Natural Division. Prairie chickens, northern harriers, short-eared owls, upland sandpipers, Henslow's sparrows, badgers and coyotes are animals of this prairie. The soils vary from deep to shallow and are derived from sandstone and shale. Osage Prairie Natural Area is owned by the Department of Conservation. Management consists of alternating treatments of haying, burning, grazing and resting of the prairie. For further information contact Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.

Little Osage Prairie Natural Area

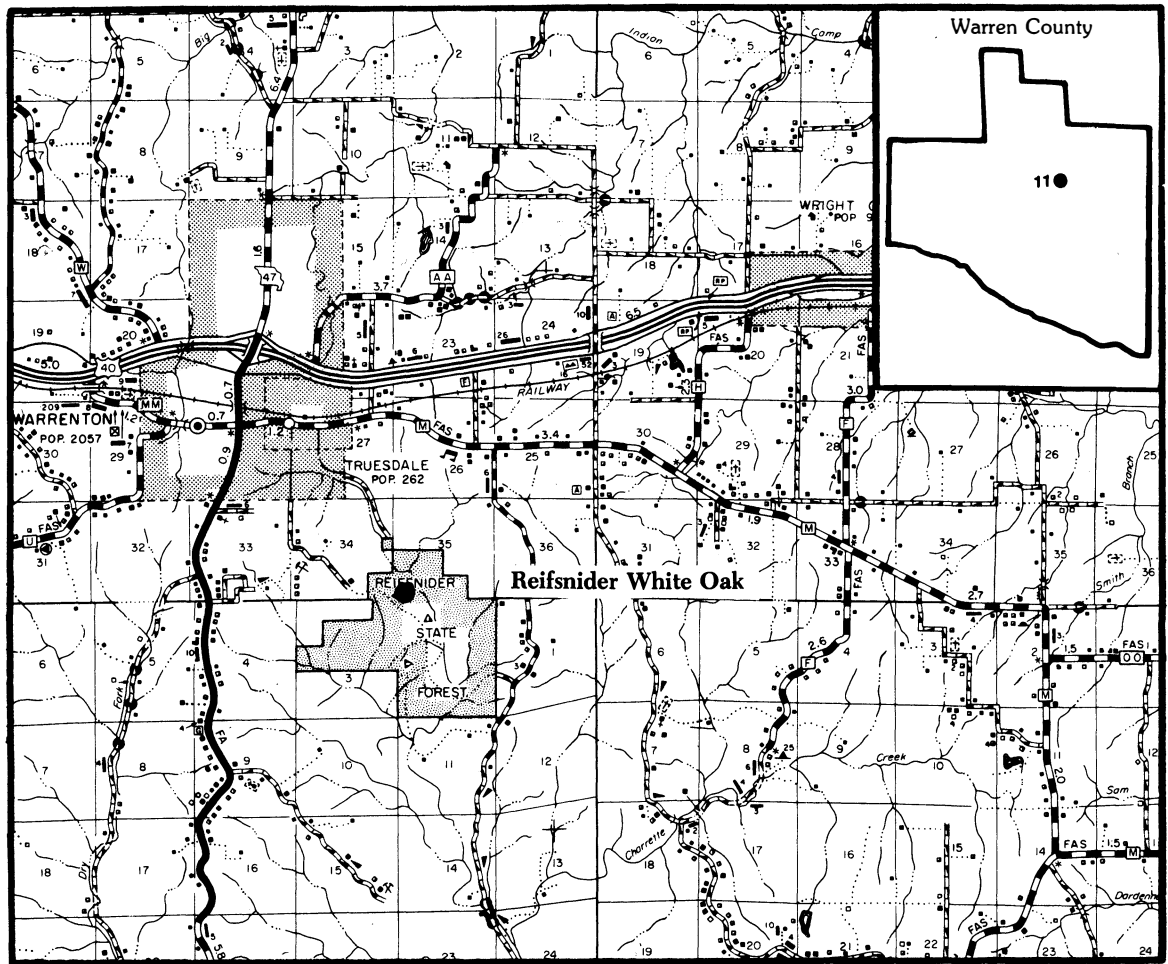
An 80-acre area about four miles south of Nevada in the SW¼ Sec. 34, T35N, R31W, Nevada 7.5 min. topographic map. Access is from a county gravel road. Designated August 26, 1975.

Natural Features—A remnant of upland tallgrass prairie with high plant diversity in the Osage Plains Natural Division. Little Osage Prairie Natural Area is owned by The Nature Conservancy and managed by the Department of Conservation. For further information contact the Wildlife Land Management Biologist, Route 2, Box 93, Lockwood, Missouri 65682, phone 417/232-4619.



Northern crawfish frog

TOM R. JOHNSON



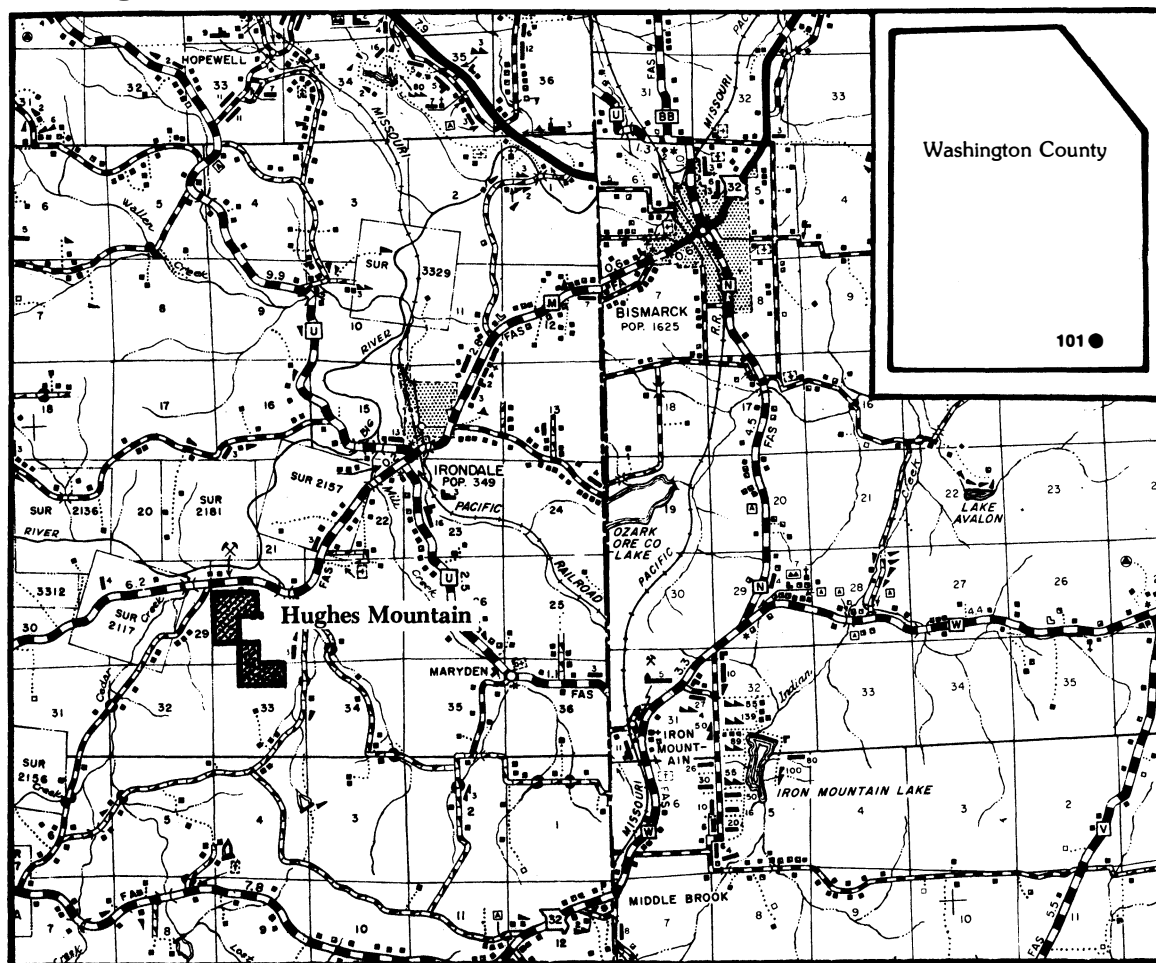
JOHN DENGLE / ST. LOUIS GLOBE-DEMOCRAT

Reifsnider White Oak Natural Area

A 22-acre portion of the Reifsnider State Forest in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Sec. 35, T47N, R2W, Wright City 7.5 min. topographic map. Access to the state forest is from a county road near the southeast corner of the area. Designated December 20, 1971.

Natural Features—A mature, white oak upland forest with trees from 100 to 120 years old and associated animals and plants in the Missouri River Section of the Ozark Border Natural Division. The predominant soil is Lindley loam, which is derived from loess. An informational brochure is available for this area. The area is owned by the Department of Conservation. For further information contact the Resource Forester, Box 157, Warrenton, Missouri 63383, phone 314/456-3368.

Trail through white oak forest at Reifsnider Natural Area



Hughes Mountain Natural Area

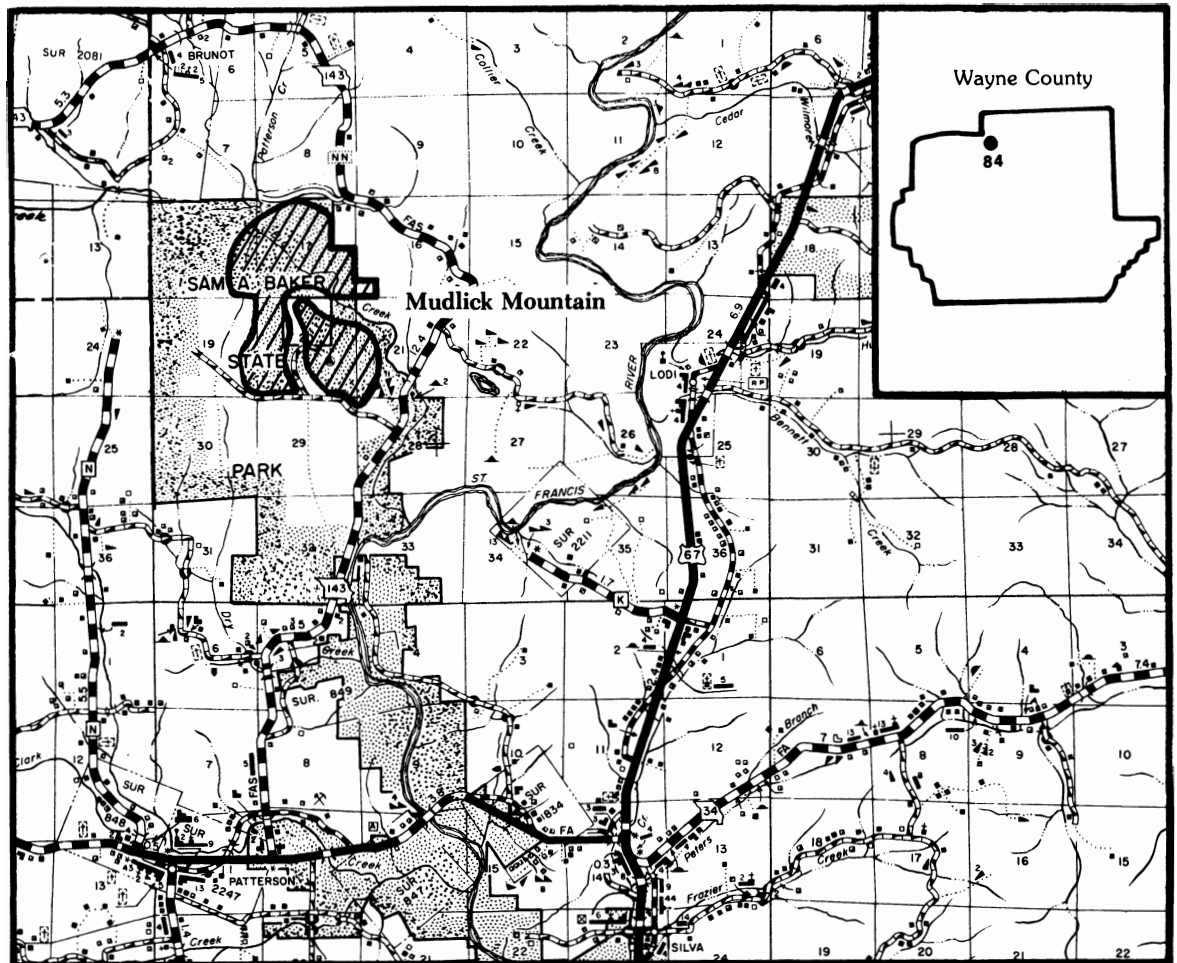
A 240-acre area 2½ miles southwest of Irondale on a county road off Hwy M in Sec. 28 and 33, T36N, R3E, Irondale 7.5 min. topographic map. Designated August 27, 1982.

Natural Features—Igneous glades (on once-molten rhyolite) and upland oak-hickory-cedar forest on thin, rocky soils in the St. Francois Mountain Section of the Ozark Natural Division. Called the Devil's Honeycomb, the polygonal jointing on this rocky mountain is a unique example of this phenomenon in Missouri. Little bluestem grass, prickly pear cactus (*Opuntia compressa*), rushfoil (*Crotonopsis elliptica*), pineweed (*Hypericum gentianoides*) and rough buttonweed (*Diodia teres*) are common plants of the glades. Blackjack oak, red cedar and black hickory are common trees of the stunted forest that surrounds the glades. The area is owned by the Department of Conservation. For further information contact the District Forester, Meramec Forest District, Box 248 (Jct. Bus. I-44 & 185 South), Sullivan, Missouri 63080, phone 314/468-4157 or 314/468-4158.



Prickly pear cactus blossom

GARY REESE



Mudlick Mountain Natural Area

A 1,370-acre area within Sam A. Baker State Park; part of Sec. 16, 17, 18, 19, 20 and 21, T30N, R5E, Brunot 7.5 min. topographic map. Designated February 10, 1981.

Natural Features—Mudlick Mountain Natural Area includes one of the most significant remaining old growth forests of the St. Francois Mountain Section in the Ozark Natural Division. The eastern slope is heavily forested and strewn with igneous boulders. Much of this slope features old growth white oak-black oak forest with a well-developed understory of flowering dogwood. The northern end of Mudlick Mountain is dissected by Big Creek, forming one of Missouri's largest and deepest canyonlike gorges with shut-

ins, igneous glades, igneous talus slopes and sheer igneous bluffs. The rare yellowwood (*Cladrastis lutea*) occurs on the rich talus slopes. Mudlick Mountain is one of the highest igneous knobs in Missouri and is subject to the impacts of windstorms, lightning, snow and ice. The natural features and weather phenomena of Mudlick Mountain are interpretive themes of the park visitor center. The area is owned by the Department of Natural Resources. For further information contact the Park Superintendent, Sam A. Baker State Park, Patterson, Missouri 63956, phone 314/856-4411.



Dry igneous forest at Mudlick Mountain Natural Area

PAUL NELSON

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